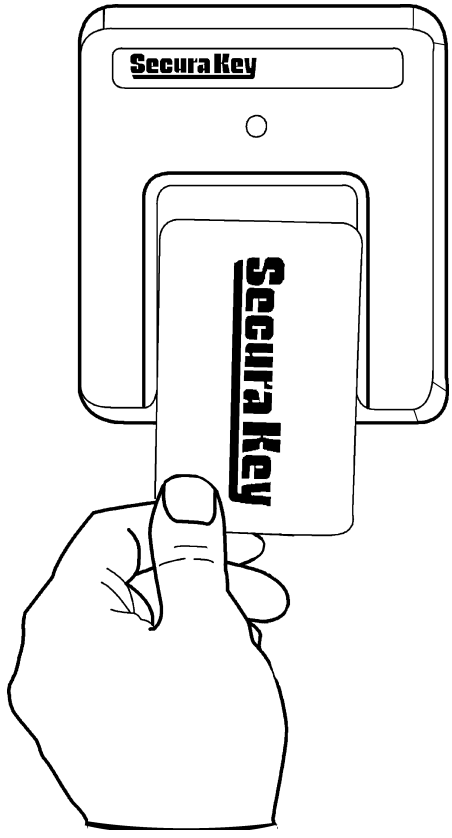
ENTRACOMP® 28SA *Plus*

User/Installation Manual



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INTRODUCTION

The **ENTRACOMP® 28SA-Plus** is a stand alone card access control system that will control access to a passageway for 65,000 individuals in 15 weekly time schedules (Time Zones). Certain Access Cards may be designated as "Limited Use" cards, and their use may be restricted to allow access for a given number of days or weeks or for a given number of times.

Programming of cards and most other programming functions are easily accomplished from outside the unit, using a PD-26 Programming Deck. (A set of 15 programming cards). The **ENTRACOMP® 28SA-Plus** may also be programmed with a terminal or PC. Transaction information is stored by the unit and may be downloaded to a terminal, PC, or serial printer. 5000 transactions may be stored at one time.

The **ENTRACOMP® 28SA-Plus** has three inputs. Each input may be programmed by the user to function as a Door Monitor, Tamper Monitor, Remote Open, Remote Inactive, Bell, Arming Circuit, or User Defined Input. Factory Defaults for these inputs are 1 - Door Monitor, 2 - Remote Open (REX), and 3 - Remote Inactive.

A second "remote" reader (SK-029W) may be added to the **ENTRACOMP® 28SA-Plus** to control access through a single passageway in both directions.

The **ENTRACOMP® 28SA-Plus** utilizes state of the art electronics in providing a product that is highly sophisticated, yet inexpensive. Patented slotless **TOUCH CARD®** reader technology protects the unit from weather and vandalism. Simply place the card on the stainless steel **TOUCH CARD®** reader plate, and the card is read instantly and accurately -- in any weather. A green light indicates that access has been granted. Since the **ENTRACOMP® 28SA-Plus** has non-volatile memory, reprogramming after a power loss is unnecessary.

CARD ID NUMBERS AND FACILITY CODES

Access cards used with the 28SA-Plus have two encoded numbers: the ID number which is different on each card, and the Facility Code, (also called a system or site code) which is the same for all cards at a given site. (The programming cards should also have the same Facility Code.) When a card is read, the system first verifies the Facility Code, then it checks the ID Number against its internal “card list” in memory to see if the card is void or valid. It also checks the Time Zone, the card’s Antipassback status, and the Limited Use count.

SETTING THE FACILITY (SYSTEM) CODE

IMPORTANT
Before programming or using a new unit,
the correct Facility Code must be set.

When power is first applied, or when the reset button is pushed (see Figure 1) the LED will flash red and green alternately. While the LED is flashing, place either a Programming Card or an Access Card with the proper facility code onto the **TOUCH CARD**® reader plate and remove it (note LED turns solid green). The **ENTRACOMP**® **28SA-Plus** will “remember” the facility code and retain it until reprogrammed. After setting the facility code, wait for the LED to stop flashing before attempting to use the program deck to program cards into the unit.

When placing standard cards on the reader, make sure that **the arrow points up and the logo faces you**. The exception is Photo ID cards, where the **arrow points up, and the photo faces you**.

To change a facility code (or to set the facility code if the LED is not flashing red/green) remove the unit from the wall to gain access to the reset button (see Figure 1). With power still connected, momentarily depress the reset

button. The LED indicator will flash red and green alternately. If the reset button is pushed, but no card is placed on the **TOUCH CARD**® reader plate before the LED indicator times out, the system code will be unchanged. In some cases it may be necessary for the unit to recognize more than one facility code. Typical instances are when a service technician needs to program a unit and the original program deck cannot be located, or when other devices such as bar-code scanners, transmitter-type gate openers or proximity readers are connected to the remote reader input (particularly if they are 26-bit devices).

The **ENTRACOMP**® **28SA-Plus** can be set to recognize up to three different facility codes. To program multiple facility codes, follow the procedure above for programming a single facility code, but place a card with the second facility code (and third facility code if necessary) on the **TOUCH CARD**® reader plate (or at the remote input device) before the red/green LED indicator times out.

Note that it is not generally recommended to combine sets of Secura Key cards with different facility codes, because the unit cannot distinguish between access cards having different facility codes and the same ID number.

ORDERING ADDITIONAL CARDS FOR YOUR SYSTEM

When you wish to add to an existing set of cards, always order additional cards with **the same facility code** as your existing cards, and with sequential (Card ID) numbering starting **one number higher** than the highest-numbered card currently in use. It is worth waiting a short time for these cards to be correctly encoded by the factory, as this will guarantee proper operation and the highest security for your system.

USING SK-NET™ SOFTWARE

SK-NET™ is a powerful Windows® (95/98/NT4.0) compatible software application program designed to monitor and control a network of up to 200

ENTRACOMP® 28SA-Plus Units per location. SK-NET is the software of choice when communicating or programming **ENTRACOMP® 28SA-Plus** Units either as stand alones or complete systems. If you do not use SK-NET™ software, you may use a terminal or terminal software to program the individual units (see below, “Using a Terminal Program”). You may also use a program deck for limited programming functions of the individual units.

If you are already familiar with other access control programs, you will find that SK-NET™ is different than what you are used to. The user interface follows Microsoft Windows® conventions, rather than a traditional menu structure. SK-NET™ Explorer works similarly to the Windows® Explorer. As in other Windows® applications, right-click menus are used extensively.

The basic version of SK-NET™ allows a single reader network connected to the PC; the Multiple Location Dial-up version (SK-NET™-MLD) allows modem communications and unlimited remote locations. See the SK-NET user manual for detailed instructions.

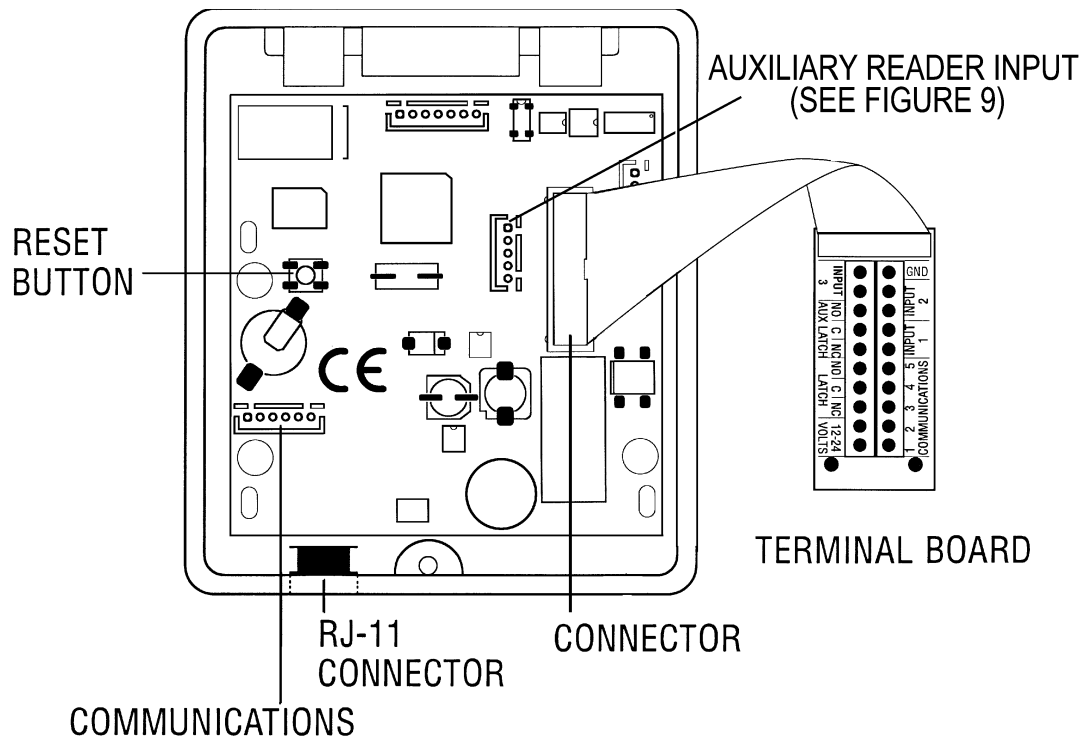


FIGURE 1

PROGRAMMING THE ENTRACOMP® 28SA-PLUS

PROGRAMMING ENTRACOMP® 28SA-PLUS USING A TERMINAL PROGRAM

Programming the **ENTRACOMP® 28SA-Plus** with a personal computer or terminal is easy because all programming functions are accomplished using simple to understand menus. Just choose what you want to do from the menu, and you will then either be given a sub-menu to further describe the required function, or you will be asked to enter information necessary to carry out the programming function you desire.

Secura Key's SA-NET™ Software was developed to program one or more 28SA-Plus's, to upload transactions to a PC, and to produce event reports. SA-LINK™ software is also available for basic programming and transaction viewing.

If you use a personal computer, and it does not have a built-in terminal or communications program, use one of the many available commercial programs, such as Procomm or a Windows terminal program. Your computer or terminal (or serial printer) should be set as follows:

Baud	9600 (or higher)
Start bit	1
Data bits	8
Stop bit	1
Parity	None
Emulation	ANSI (or compatible)

BAUD RATE . The Baud Rate of the **ENTRACOMP® 28SA-Plus** defaults to 9600, but may be changed via the menu system using a PC or terminal. Baud Rates up to 38,400 are possible, although not all PC COM ports are capable of high data rates. Once changed, the new Baud Rate will become effective

the next time you log onto the system or connect a printer. The Baud Rate may also be set using a Programming Deck (see page 29). Note that if you are using Secura Key software or any other terminal software, the Baud Rate at the reader must match the Baud Rate at the PC.

LOGGING ON AND OFF. To prevent unauthorized programming of the **ENTRACOMP® 28SA-Plus** when using a PC or terminal, it is necessary to enter a password at the beginning of every programming session. When communications are first established with the **ENTRACOMP® 28SA-Plus**, the screen will say:

WELCOME TO ENTRACOMP® 28SA-PLUS
ENTER PASSWORD:

The default password is “12345”. When you begin your first programming session, enter “12345” and press the “ENTER” key when the password is requested. The main menu will then be displayed.

During this first programming session, use the “Password” menu selection of the System Settings Menu to set a password of your choice. You may change your password at any time using the “Password” selection of the menu. It is not necessary to set or use a password when programming your unit with the Program Deck.

Note that when using Secura Key’s SK-NET ™ software, it is recommended that when you change the password you do so from the location properties while connected to the **28SA-Plus**. A separate manual is included with the SK-NET™ software.

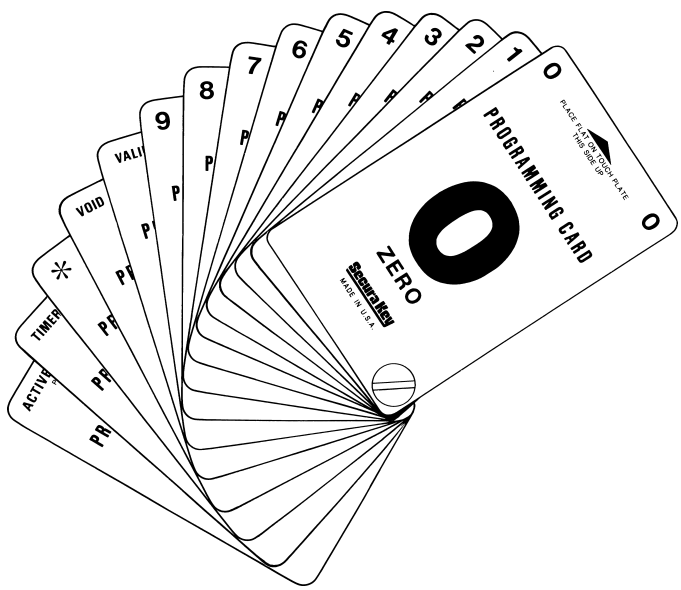
If you should forget your password, you must turn off the power to the unit. Then, while holding in the reset button (see Figure 1), turn the power back on. This will reset the password to “12345.” This same procedure also re-calibrates

the sensors in the reader, so be sure there is no magnetism near the reader (i.e., a card) when the password is being reset. Wait for the red/green flashing LED to time out (stop blinking) before putting cards on the **TOUCH CARD**® reader plate. This procedure should be done with the unit at average operating temperatures; not in extreme heat or cold.

When the reader is connected to a PC or data terminal, the reader will automatically logoff after four minutes with no keyboard activity. You will then be required to enter the password again to access the system. Automatic logoff occurs while in any menu or sub-menu except when displaying current transactions. It is advisable to exit the system when you are finished by using the “Logoff” selection of the main menu.

PROGRAMMING WITH PROGRAM CARDS

There are two kinds of cards used with the **ENTRACOMP® 28SA-Plus**: Access Cards and Program Cards. Access Cards are used by individuals to gain access to the passageway. Program Cards are used to tell the **ENTRACOMP® 28SA-Plus** what to do.



The Program Cards are as follows:

“0”	ZERO
“1”	ONE
“2”	TWO
“3”	THREE
“4”	FOUR
“5”	FIVE
“6”	SIX
“7”	SEVEN
“8”	EIGHT
“9”	NINE
“*”	THRU
“VALID”	VALIDATE
“VOID”	VOID OR CANCEL
“SET TIMER”	SET LATCH, ANTIPASSBACK TIMER, TIME/DATE
“ACTIVE/INACTIVE”	ACTIVATE OR INACTIVATE SYSTEM

Most basic functions of the **ENTRACOMP® 28SA-Plus** may be programmed by placing the Program Cards on the **TOUCH CARD®** reader plate in a proper sequence.

However, some things (such as configuring the inputs, configuring Time Zones, Holidays, Limited Use, antipassback or setting the password) may only be programmed using a personal computer or terminal.

As with Access Cards, Program Cards are magnetically encoded with a common facility code and instruction information. The facility code of your Program Cards is normally the same as the facility code of your Access Cards. Your unique facility code is what prevents Program Cards from other systems from programming your system.

There are 15 different Program Cards. There are ten number cards (0 through 9) and five function cards. These 15 Program Cards are attached to each other in a convenient Program Deck configuration (PD-26).

It is helpful to think of placing a Program Card on the **TOUCH CARD**® reader plate as depressing a key on a keyboard or key pad. You may begin programming at any time by placing the first Program Card of the sequence on the **TOUCH CARD**® reader plate. At this point the LED indicator will show an amber color. When you remove the Program Card from the **TOUCH CARD**® reader plate, the LED indicator will flash the amber color awaiting the next Program Card. Placement of the next Program Card on the **TOUCH CARD**® reader plate causes the amber LED to stop flashing and become solid.

In like manner, the remainder of the Program Cards for the programming sequence are placed on the **TOUCH CARD**® reader plate. At the end of the programming sequence, the LED indicator will flash green to indicate that the programming instruction has been accepted.

While programming, it is necessary to place the next card of the sequence on the **TOUCH CARD**® reader plate while the LED indicator is flashing amber (you have approximately 10 seconds between each card). If the amber LED times out (stops blinking) it will be necessary to restart the programming sequence. Should an error be made in the programming sequence, the LED indicator will flash red instead of green.

CONFIGURING THE ENTRACOMP® 28SA-PLUS

The **ENTRACOMP® 28SA-Plus** defaults to the maximum configurations of cards, transactions, and Time Zones. Only the Limited Use card range and Input Point definitions require configuration, which can only be done using a PC or terminal.

LIMITED USE CARDS

The maximum number of cards that may be used as limited use cards is 4000. The default setting always starts at card number one and ends at 4000. However, it is possible to choose the exact block of cards that you wish to have operate as limited use cards. To change the block of cards that may be set for limited use, choose 5 (System Configuration) on the Main Menu. Then select item 4 (Limited Use Cards) on the Configuration Menu. Enter the first number of the desired block of cards. The starting sequential number for limited use cards can be set to any value (1 - 65000). The ending number will automatically be the Starting Number + 4000 (65000 maximum), but it may be changed. For more information on how limited use cards function, see page 15.)

DEFINING INPUTS

The **ENTRACOMP® 28SA-Plus** has three inputs. In the default configuration, the inputs are set as follows: 1) Door Monitor, 2) Remote Open, and 3) Remote Inactive. Using the menu system these inputs may each be programmed to function in one of seven ways (described below). If the input feature is not needed, use the System Configuration menu to set each input to Disabled.

TAMPER . When the input is activated, a “Tamper” message is recorded, and the unit becomes inactive until the input is deactivated. If the unit is connected to a printer, the message is also sent immediately.

ARMING CIRCUIT . This configuration is normally used in parking lot situations. The input would normally be connected to an output of a vehicle detector. The unit will not allow access without the detector sensing the presence of a vehicle. If an entry attempt is made while the input is not activated, entry will be denied and an “Arming Input” error message will be recorded. If the unit is connected to a printer, the message is also sent immediately. (Jumper if unused).

DOOR MONITOR . If the door is open, other than during a valid entry, a “Door Open” message is recorded. If the unit is connected to a printer, the message is also sent immediately. If, during a valid entry, the Door Monitor senses that the door has been opened and closed prior to expiration of the latch timer, the latch relay will immediately be reset; this feature is sometimes called “anti-tailgate.”

BELL . When activated, the unit sends an ASCII “bell” signal to the PC (if monitoring real-time transactions) or Serial Printer (if connected). This will cause a PC and some serial printers to “beep.”

REMOTE INACTIVE . The unit may be made inactive remotely using a switch. While inactive the LED blinks Red slowly, and no cards will be granted access. An appropriate message will be recorded and will be sent to the PC (if monitoring real-time transactions) or Printer (if connected).

REMOTE OPEN . (Also called Request to Exit). The passageway may be opened remotely using a push button, switch or contact output from an Exit PIR designed for access-controlled doors. Remote Open functions even when the unit is in an inactive mode. An appropriate message will be recorded and will be sent to the PC (if monitoring real-time transactions) or Printer (if connected).

USER DEFINED . This selection allows the user to define the action taken when the input is activated. The user may create the transaction text message to be recorded and decide if the **ENTRACOMP® 28SA-Plus** is to grant access and if the Bell signal is to be sent.

To change the definition of an input, choose 5 (System Configuration) from the Main Menu. Then, from the System Configuration Menu, choose 1, 2, or 3 depending whether input 1, 2, or 3 is to be redefined. Then select the desired input function from the Input Definition Menu.

ACCESS CARD PROGRAMMING/STATUS

PROGRAMMING ACCESS CARDS INTO TIME ZONES

Access Cards are programmed into one of 15 Time Zones. The particular Time Zone into which an Access Card is programmed determines if and when a cardholder will be granted access. **Programming an Access Card into Time Zone "0" makes the card void (it never is allowed access)**. Programming an Access Card into Time Zone "1" makes a card valid for entry without restriction as long as the **ENTRACOMP® 28SA-Plus** is in an active mode. Programming an Access Card into any other Time Zone restricts the card's usage, depending upon how the Time Zone is set (see page 31 for setting Time Zones).

USING THE MENU SYSTEM. To program cards using the menu system, select item 2 (Cards) from the main menu. Then select 1 (Program Cards Into a Time Zone) from the Card menu. Then in the Program Cards dialog box, enter the Time Zone into which the cards are to be programmed, the starting number of the block of cards to be programmed, and the ending number of the block of cards to be programmed. To program one card only, use its number as the starting and ending number.

USING A PROGRAMMING DECK. Programming a single card is slightly different than programming a block of cards when using the Programming Deck.

PROGRAMMING A SINGLE CARD. To program a single card into a Time Zone, place the sequence of Program Cards representing the card number on the **TOUCH CARD®** reader plate. Then place the "✶" (THRU) card on the **TOUCH CARD®** reader plate, remove it. Then place the sequence of cards representing the Time Zone on the **TOUCH CARD®** reader plate, remove it and place the "✶" (THRU) card on the **TOUCH CARD®** reader plate. Then place the "VALID" card on the **TOUCH CARD®** reader plate and remove it.

Example: Program card number 11 into Time Zone 12.

Place the “1” card on the **TOUCH CARD**® reader plate, remove it and again place the “1” card on the **TOUCH CARD**® reader plate, remove it and place the “*” (THRU) card on the **TOUCH CARD**® reader plate. Remove it and place the “1” card on the **TOUCH CARD**® reader plate, remove it and place the “2” card on the **TOUCH CARD**® reader plate, remove it and place the “*” (THRU) card on the **TOUCH CARD**® reader plate. Then place the “VALID” card on the **TOUCH CARD**® reader plate, and remove it.

1 + 1 + * + 1 + 2 + * + VALID

PROGRAMMING A BLOCK OF CARDS . To program a block (continuous sequence) of cards into a particular Time Zone, place the sequence of cards representing the first card number of the block on the **TOUCH CARD**® reader plate, then the “*” (THRU) card, then the sequence of cards representing the last card number of the block, then the “*” (THRU) card. Then place the sequence of cards representing the Time Zone on the **TOUCH CARD**® reader plate, remove it and place the “*” (THRU) card on the **TOUCH CARD**® reader plate. Then place the “VALID” card on the **TOUCH CARD**® reader plate.

Example: Program cards 5 thru 22 into Time Zone 6.

Place the “5” card on the **TOUCH CARD**® reader plate, remove it and place the “*” (THRU) card on the **TOUCH CARD**® reader plate, remove it and place the “2” card on the **TOUCH CARD**® reader plate, remove it and again place the “2” card on the **TOUCH CARD**® reader plate, remove it and place the “*” (THRU) card on the **TOUCH CARD**® reader plate, remove it and place the “6” card on the **TOUCH CARD**® reader plate, remove it and place the “*” (THRU) card on the **TOUCH CARD**® reader plate, remove it and place the “VALID” card on the **TOUCH CARD**® reader plate, and remove it.

5 + * + 2 + 2 + * + 6 + * + VALID

VOIDING CARDS . To void (cancel) Cards, program them into Time Zone “0,” or, using the Program Deck, enter the card number or number range and then use the VOID card.

PROGRAMMING CARDS FOR LIMITED USE

Only those Access Cards that have been designated as Limited Use Cards may be programmed for limited use (see page 10). Access Cards in Time Zones “0” or “1” may not be programmed for limited use. Changing the Time Zone of an Access Card will have no effect on its limited use status except that an Access Card programmed into Time Zones “0” or “1” will be deleted from limited use.

Limited use restrictions may be set for either limited number of uses, limited number of days from “now”, limited number of weeks from “now”, limited number of days from first use, use counter, or no limited use restrictions. Any Access Card within the block of cards configured for limited use may be set to have one of these limited use functions, each with its own number of days, or uses as described below.

LIMITED NUMBER OF USES. Number of uses may be set to from 1 to 500. Each time access is granted, the number of uses is reduced by one until there are no uses left. At this point, further access will be denied until more uses are programmed. Access Cards are still subject to Time Zone restrictions.

LIMITED NUMBER OF DAYS. The number of days that the Access Card will be granted access (up to 500) may be set when this limited uses option is selected. Each day the number of days counter will be reduced by one until no days are left. At this point the Access Card will be denied further access until more days are programmed. Time Zone restrictions must also be met for access to be granted.

LIMITED NUMBER OF WEEKS. The number of weeks that the Access Card will be granted access (up to 500) may be set when this limited uses option is selected. Each week the number of weeks counter will be reduced by one until no weeks are left. At this point the Access Card will be denied further access until more weeks are programmed. Time Zone restrictions must also be met for access to be granted.

LIMITED NUMBER OF DAYS FROM FIRST USE. This Limited Use option is similar to the limited number of days selection, except that the number of days of access (up to 500) is counted from the day the Access Card is first granted access.

COUNT NUMBER OF USES. This selection does not actually restrict access but counts how many time access has been granted. Therefore, no number of days or uses are entered. Selecting this choice for a card merely resets the counter to 0. Each time access is granted, the counter is incremented by one. The number of access granted may be viewed using the Status Menu. The counter can only count to 500. If more than 500 accesses have been granted since the counter was last reset, the status report will indicate “>500”.

NO LIMITED USE. This option is used to remove any of the above limited use settings.

To program Access Cards for Limited Use, choose 2 (Cards) from the Main Menu. Then select 2 (Program Limited Use Cards) followed by the Limited Use selection from the Limited Use Menu and enter the required number and the first and last card numbers for the range of cards to be programmed.

CARD STATUS

Reports on the status of Access Cards may be obtained by choosing 2 (Cards) from the Main Menu and then selecting 3 (Display Card Status) from the Cards

Menu. Card status is always displayed in numerical order of the block specified. If a particular Time Zone is selected, only those cards of the selected block that are in the Time Zone will be displayed. If "ALL" is chosen for the Card Time Zone entry, all cards of the selected block will be displayed.

If a particular Time Zone is chosen, the number of the card, the limited use status (i.e., None, Days, Weeks, Uses, or Times), and the remaining uses, days, weeks, or the times access has been granted will be displayed. If "ALL" is selected, the same information as above plus the Time Zone of each card will be displayed.

ANTIPASSBACK FORGIVE

This selection allows you to specify all cards or a range of cards to be immediately set to a Neutral status for Real Antipassback. This allows access to any card previously denied access due to a Real Antipassback violation (e.g. attempting a second badging at an IN reader). This only affects cards programmed into Time Zones with Real Antipassback enabled. The range may be set to apply to one card or all cards. Once forgiven, a card's Real Antipassback status (IN or OUT) will be determined by the next Real Antipassback reader in which the card is used. For more information on Antipassback, see page 24.

FORGIVE ANTIPASSBACK USING THE MENU SYSTEM

Choose 2 (Cards) from the Main Menu, then choose 4 (Antipassback Forgive) from the Cards Menu. You may then specify All or Range. If you select Range, you must enter beginning and ending card numbers for the range and enter Y (Yes) to the confirmation prompt.

FORGIVE ANTIPASSBACK USING THE PROGRAMMING DECK

To forgive antipassback for all cards using the programming deck, place the * card on the TOUCH CARD® reader plate followed by the SET TIMER card. You cannot forgive a range of cards using the program deck.

ANTIPASSBACK DISABLE/ENABLE

Occasionally, due to a gate or door at an IN or OUT reader being temporarily inoperative, cardholders' antipassback status may become out of sync, necessitating the disabling of antipassback at the reader. Although this can be done with the SA-NET ™ software by disabling APB in all applicable Time Zones, it may be simpler to make a temporary change using the program deck.

To disable antipassback at a reader using the program deck, place the VOID card on the TOUCH CARD® reader plate followed by the SET TIMER card. This will allow access to any otherwise valid card regardless of that card's current IN/OUT Antipassback status.

To re-enable antipassback at a reader using the program deck, place the VALID card on the TOUCH CARD® reader plate followed by the SET TIMER card.

DOOR CONTROL

The **ENTRACOMP® 28SA-Plus** provides complete control of the passageway via the menu system. Some door control functions may also be performed using the Programming Deck.

REMOTE OPEN VIA THE MENU

To open the door using the menu system, choose 3 (Door Control) from the Main Menu and then 1 (Open Door Now) from the Door Menu. You will be asked if you are sure. If you answer yes, the door will be opened for the same latch time period as when a card is used to open the door. An appropriate message will be recorded and sent to the PC (if monitoring real-time transactions) or Printer (if connected). See page 11 for Remote Open Using Inputs.

DOOR UNLOCK MODE

The relay may be set to stay latched (door unlocked) during periods when access control is unwanted. While in the “DOOR UNLOCK” mode, the relay stays activated, and the LED indicator will flash green approximately once every second. The unit may not be programmed with the programming deck, nor will it recognize Access Cards while in the “DOOR UNLOCK” mode.

DOOR UNLOCK VIA THE MENU . To activate the Door Unlock mode, choose 3 (Door Control) from the Main Menu. Then choose 2 (Unlock Door Indefinitely) from the Door Menu. An appropriate message will be recorded and will be sent to the PC (if monitoring real-time transactions) or Printer (if connected). To deactivate the Door Unlock Mode, choose 5 (Return To Normal Mode) from the Door Menu or place the “ACTIVE/INACTIVE” card of the Programming Deck on the **TOUCH CARD®** reader plate and remove it

DOOR UNLOCK USING THE PROGRAMMING DECK. To set the unit to the DOOR UNLOCK Mode, place the "*" (THRU) card on the **TOUCH CARD**® reader plate, remove it and place the "ACTIVE/INACTIVE" card on the **TOUCH CARD**® reader plate and remove it.

To return the **ENTRACOMP**® **28SA-Plus** to normal operation, place the "ACTIVE/INACTIVE" card on the **TOUCH CARD**® reader plate and remove it or choose 5 (Return To Normal Mode) from the Door Menu.

DOOR UNLOCK UNTIL A SET TIME

Using the Menu System, the **ENTRACOMP**® **28SA-Plus** may be put into the door unlock mode until a user selected date and time. Choose 3 (Door Control) from the Main Menu. Then choose 3 (Door Unlock Until A Set Time). From the dialog box enter the date and time that the Door Unlock mode is to expire. An appropriate message will be recorded and sent to the PC (if monitoring real-time transactions) or Printer (if connected).

You may cancel the door unlock mode at any time choosing 5 (Return To Normal Mode) from the Door Menu or placing the "ACTIVE/INACTIVE" card of the Programming Deck on the **TOUCH CARD**® reader plate and removing it.

INACTIVE MODE

The **ENTRACOMP**® **28SA-Plus** may be made inactive for entry with a card by placing the "ACTIVE/INACTIVE" card of the Programming Deck on the **TOUCH CARD**® reader plate and then removing it. You may also choose 3 (Door Control) from the Main Menu and then 4 (Make Reader Inactive Indefinitely) from the Door Menu. An appropriate message will be recorded and sent to the PC (if monitoring real-time transactions) or Printer (if connected).

While the reader is in the Inactive Mode, the LED indicator will flash red approximately once every second. The unit may not be programmed with the Programming Deck while it is in the Inactive Mode. To reactivate the reader, again place the “ACTIVE/INACTIVE” card on the **TOUCH CARD**® reader plate and remove it or choose 5 (Return To Normal Mode) from the Door Menu. See page 11 for Inactive Using Inputs.

SYSTEM SETTINGS

DATE AND TIME

The **ENTRACOMP® 28SA-Plus** stores 5000 transactions. In order to know when a transaction has occurred, it is necessary to set the internal clock to the correct date and time. Time is kept in a 24 hour (military) manner. Even if you do not intend to use transaction information, it is necessary to set the date and time for proper operation of Time Zones. Once set, the Automatic Daylight Savings Time Adjustment feature will automatically change the time to activate and de-activate Daylight Savings Time (See page 35).

Note that the 28SA-Plus and the various Secura Key software programs are all “Year 2000 Compliant.”

SETTING DATE AND TIME USING THE MENU . To set the date and time choose 4 (System Settings) from the Main Menu. Then select 1 (Date) from the System Settings Menu to set the date followed by 2 (Time) from the System Settings Menu to set the time.

SETTING THE DATE AND TIME USING CARDS . To set the date, place the cards on the **TOUCH CARD®** reader plate that represent the month (1 - 12), then place the “*” on the **TOUCH CARD®** reader plate, then place the cards on the **TOUCH CARD®** reader plate that represent the day of the month (1 - 31), then place the “*” on the **TOUCH CARD®** reader plate, then place the cards on the **TOUCH CARD®** reader plate that represent the last two digits of the year (e.g., 99), then place the “SET TIMER” card on the **TOUCH CARD®** reader plate and remove it.

Example: Set date to 9/28/99.

Place the "9" card on the **TOUCH CARD**® reader plate and remove it. Then place the "*" card on the **TOUCH CARD**® reader plate and remove it, and place the "2" card on the **TOUCH CARD**® reader plate and remove it, and place the "8" card on the **TOUCH CARD**® reader plate and remove it, and place the "*" card on the **TOUCH CARD**® reader plate and remove it. Then place the "9" card on the **TOUCH CARD**® reader plate and remove it and place the "9" card on the **TOUCH CARD**® reader plate and remove it. Then place the "SET TIMER " card on the **TOUCH CARD**® reader plate and remove it.

9 + * + 2 + 8 + * + 9 + 9 + SET TIMER

To set the time, place the cards on the **TOUCH CARD**® reader plate that represent the hour (0 - 24), then place the "*" on the **TOUCH CARD**® reader plate and remove it, then place the cards on the **TOUCH CARD**® reader plate that represent the minutes (0 - 60), and then place the "SET TIMER" card on the **TOUCH CARD**® reader plate and remove it.

Example: Set time to 13:27 hours (1:27 pm).

Place the "1" card on the **TOUCH CARD**® reader plate and remove it, then place the "3" card on the **TOUCH CARD**® reader plate and remove it. Then place the "*" card on the **TOUCH CARD**® reader plate and remove it, then place the "2" card on the **TOUCH CARD**® reader plate and remove it, then place the "7" card on the **TOUCH CARD**® reader plate and remove it. Then place the "SET TIMER" card on the **TOUCH CARD**® reader plate and remove it.

1 + 3 + * + 2 + 7 + SET TIMER

LATCH TIMER

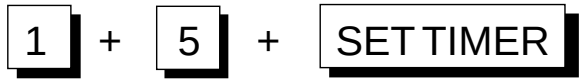
The output from the relay may be set to any number of seconds from 1 to 30. Setting the latch timer to “0” produces a 0.25 second output, timed from when a valid card is placed on the **TOUCH CARD**® reader plate.

SETTING THE LATCH TIMER VIA THE MENU. To set the Latch Timer using the Menu System, choose 4 (System Settings) from the Main Menu. Then from the System Settings Menu, select 3 (Latch Timer).

SETTING THE LATCH TIMER USING CARDS. To set the Latch Timer using the Program Deck, place on the **TOUCH CARD**® reader plate the sequence of Program Cards representing the number of seconds the latch is to be on, then place the “SET TIMER” card on the **TOUCH CARD**® reader plate and remove it.

Example: Set latch timer for 15 seconds.

Place the “1” card on the **TOUCH CARD**® reader plate, remove it and place the “5” card on the **TOUCH CARD**® reader plate, remove it and place the “SET TIMER” card on the **TOUCH CARD**® reader plate, and remove it.



ANTIPASSBACK

Antipassback is a feature designed to prevent or discourage an authorized cardholder from passing their card back to an unauthorized person who wishes to re-use the same card to obtain access. The most common application for Antipassback is Parking. Antipassback is not generally practical for use by office or factory personnel, unless turnstiles are in use.

When Antipassback is enabled, the 28SA-Plus will temporarily void a card after the first use, so that any person attempting to reuse the same card in the same reader will be denied access. This temporary void status is stored in memory in the 28SA-Plus. Different types of Antipassback use different methods to void and reset the card.

The 28SA-Plus offers two types of Antipassback: Real and Timed.

REAL ANTIPASSBACK requires the use of a 28SA-Plus and a Remote Reader. The main reader (the 28SA-Plus) can be designated as an **In** reader or an **Out** reader; the Remote reader automatically takes the opposite type. In memory, each cardholder has In, Out, or Neutral Antipassback status, which is determined by the antipassback type of the reader where the card was last used The cardholder must have Out status to use an In reader and vice-versa. As long as the IN and OUT readers are used in alternating sequence, there will be no restriction; if a card is used at an IN reader twice in a row, or at an OUT reader twice in a row, the second access attempt is denied.

Real Antipassback only applies at one set of Primary / Remote readers. Even if multiple readers are connected to a PC using Smart Switches and SA-NET™ software, other 28SA Units at the same site will be unaware of the cardholder's IN/OUT status change.

TIMED ANTIPASSBACK sets the card to Void status for a user-defined time period. Once the time period expires, the card can be re-used in the reader. For every card use, a comparison is made in transaction history to that card's previous use to see if the time period has elapsed. Timed antipassback only applies at a single reader; other 28SA-Plus units at the same site will not be able to make a time comparison. Note that if a Remote Reader is connected to the 28SA-Plus, once a given card is used, it cannot be reused at either the remote or main reader until the time period has expired.

CONFIGURING REAL ANTIPASSBACK

To configure a 28SA-Plus and Remote Reader for Real Antipassback, you must first set the 28SA-Plus (Primary Reader) as either an IN or OUT reader. To set reader IN/OUT status, choose 5 (Configuration Menu), select 5 (Primary Reader), then select N (None), I (In), O (Out), or press ESC to exit. The Remote Reader automatically takes the opposite status. Real Antipassback cannot be set up with the program deck.

To be affected by Real Antipassback, cards must be assigned to a Time Zone with Real Anti-Passback enabled. See Page 13 for information on how to assign a card to a Time Zone, and see Page 32 for information on how to set Real Anti-Passback in a Time Zone.

The DAILY APB FORGIVE HOUR feature is also available on the Configuration Menu. During the course of the day, cardholders' Antipassback (APB) status may get out of synchronization when entering or exiting without using a card (due to disabled parking gates, exiting after-hours, etc.) DAILY APB FORGIVE will set all cards to a Neutral status, so that all cards will work the first time they are used on the following day, regardless of their Antipassback status at the end of the previous day. After the first usage, the card's Real Antipassback status will change normally.

CONFIGURING TIMED ANTIPASSBACK

If Timed Antipassback is selected, a card used for entry is made temporarily void for a user-definable amount of waiting time. The antipassback waiting time may be set to any number of minutes from 1 to 30. However, the actual waiting time will fluctuate between the time set and the time set plus one minute. Thus, if the antipassback time is set to 5 minutes, users will have to wait a minimum of 5 minutes and a maximum of 6 minutes before reentry will be

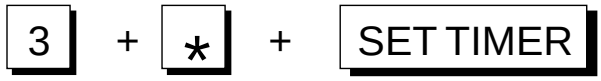
allowed. **Setting the antipassback waiting time to 0 will disable the Timed Antipassback feature and reentry will be allowed immediately.**

SETTING ANTIPASSBACK WAITING TIME USING A MENU . To set the Antipassback Waiting Time using the Menu System, choose 4 (System Settings) from the Main Menu. Then from the System Settings Menu, select 4 (Antipassback Timer).

SETTING ANTIPASSBACK WAITING TIME USING CARDS. To set the Antipassback Waiting Time using the Program Deck, place on the **TOUCH CARD**® reader plate the sequence of cards representing the number of minutes of the minimum waiting period (1 to 30), then place the "*" card on the **TOUCH CARD**® reader place and remove it, then place the "SET TIMER" card on the **TOUCH CARD**® reader plate and remove it.

Example: Set antipassback waiting time to 3 minutes.

Place the "3" card on the **TOUCH CARD**® reader plate, remove it, and place the "*" on the **TOUCH CARD**® reader plate, remove it, and place the "SET TIMER" card on the **TOUCH CARD**® reader plate, and remove it.



See Pages 17-18 for more information on Antipassback Control.

PASSWORD PROTECTION

To prevent unauthorized programming of the **ENTRACOMP® 28SA-Plus** when using a personal computer or terminal, it is necessary to enter a password at the beginning of every programming session. The default password is “12345”. When you begin your first programming session, enter “12345” and press the “ENTER” key when the password is requested.

The **ENTRACOMP® 28SA-Plus** will automatically logoff after four minutes with no keyboard activity. You will then be required to enter the password again to access the system. Automatic logoff occurs while in any menu or sub-menu except when displaying current transactions. It is advisable to exit the system when you are finished by using the “Logoff” selection of the main menu.

CHANGING THE PASSWORD . During this first programming session it is advisable to change the Password. To change the Password, choose 4 (System Settings) from the Main Menu followed by 5 (Password) from the System Settings Menu. The Password may be up to 16 characters long and may consist of numbers, letters, and symbols. You may change your password at any time.

It is not necessary to set or use a password when programming your unit with the Program Cards.

RESETTING THE PASSWORD. If you should forget your password, you must turn off the power to the unit. Then, while holding the reset button in (see Figure 1), turn the power back on. This will reset the password to “12345.” Since this process also recalibrates the TOUCH CARD® reader, be sure there is no magnetism near the reader (i.e., a card) when the password is being reset. Wait for the red/green flashing LED to time out before putting cards on the TOUCH CARD® reader plate (see Figure 1). This procedure should be done with the unit at average operating temperatures and not in extreme heat or cold.

BAUD RATE

The Baud Rate is the speed at which the ENTRACOMP® 28SA-Plus communicates with the outside world (PC, terminal, or printer). The default Baud Rate (speed of communication) is 9600. If you wish to change the baud rate, and you do not have a PC or terminal, the Programming Deck may be used. The allowable Baud Rates are 300, 1200, 2400, 4800, 9600, 19200 and 38400. Note that the serial interface cards in some older PCs are not capable of communicating at Baud Rates above 9600.

SETTING THE BAUD RATE VIA THE MENU. The Baud Rate of the ENTRACOMP® 28SA-Plus may be changed via the menu system using a PC or terminal. Once changed, the new Baud Rate will become effective the next time you log onto the system or connect a printer. To change the Baud Rate, choose 4 (System Settings) from the Main Menu. Then from the System Settings Menu, choose 6 (Baud Rate) and select the desired Baud Rate from the Baud Rate Menu.

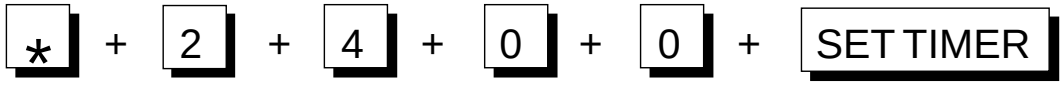
If you are using SA-NET™ software, be sure to also change the baud rate of the port configuration in the Setup menu. Choose Configure Location, select a location, select Edit, then enter the new value in the Baud Rate field and Save the changes. Exit SA-NET™, then restart the program.

SETTING THE BAUD RATE USING CARDS. To set the baud rate using Program Cards, place the "*" card on the **TOUCH CARD®** reader plate and remove it, then place on the **TOUCH CARD®** reader plate the sequence of cards representing the baud rate, then place the "SET TIMER" card on the **TOUCH CARD®** reader plate and remove it.

Example: Set baud rate to 2400

Place the "*" card on the **TOUCH CARD®** reader plate and remove it. Then

place the “2” card on the **TOUCH CARD®** reader plate and remove it, then place the “4” card on the **TOUCH CARD®** reader plate and remove it, then place the “0” card on the **TOUCH CARD®** reader plate and remove it, and again place the “0” card on the **TOUCH CARD®** reader plate and remove it. Then place the “SET TIMER” card on the **TOUCH CARD®** reader plate and remove it.



READER ID

Each **ENTRACOMP® 28SA-Plus** has the capability of being given an ID or Name. This ID is shown on all status reports at the beginning of the report. If the **ENTRACOMP® 28SA-Plus** is connected to a printer, each transaction includes the reader ID. This feature is very useful when multiple **ENTRACOMP® 28SA-Plus** units are connected to the same printer through a Smart Switch.

To set the reader ID, choose 4 (System Settings) from the Main Menu and then 7 (Reader ID) from the System Settings Menu. The reader ID may be up to 16 characters long and may include numbers, letters, and symbols. If a reader ID is not desired, use “NONE” for the ID request.

MODEM STRING

Whenever the 28SA-Plus senses that a modem is present (according to the Communications input wiring) it sends setup instructions to the modem via the Communications Port (1 - 5 on the terminal block). This series of ASCII characters sets the modem to Dumb Mode and Auto Answer Mode. The default string is AT&D0&C0&S0, where 0 = the number Zero. If this string does not work with your modem, you can customize the string as required. Contact Secura Key Technical Support for further information. Also see page 46 for more information on modem communications.

TIME ZONES

Time Zones are schedules that determine when an Access Card is to work. Access Cards are programmed into one of 16 Time Zones (0 thru 15).

Programming an Access Card into Time Zone “0” renders the Access Card “Void”- it is never granted access. Programming an Access Card into Time Zone “1” will allow the Access Card access without restriction as long as the **ENTRACOMP® 28SA-Plus** is in the Active Mode. Access Cards programmed into Time Zones 2 and higher will be granted access within time restrictions as set into each Time Zone.

THE WEEKLY SCHEDULE

Each Time Zone is a Weekly Schedule consisting of 8 days (Sunday thru Saturday and Holiday). Each Day of the Weekly Schedule is broken up into 48 one half hour segments. An Access Card programmed into a given Time Zone will be allowed access only during those time segments that are “ON”. The day designated “Holiday” is the schedule for any day that has been defined as a holiday, no matter on what day of the week it falls (see page 34 for defining holidays).

SETTING THE WEEKLY SCHEDULE. To set or change a Time Zone’s Weekly Schedule, choose 4 (System Settings) from the Main Menu. Select 8 (Time Zone) from the System Settings Menu followed by 1 (Time Zones) from the Time Zone Menu. Enter the Time Zone to be edited (only Time Zones “2” or greater may be edited).

Once in the Weekly Schedule for the Time Zone, select the number of the day to be edited. The cursor will move up to the day to be edited. An “*” indicates the one-half hour segment is on, a blank space indicates that the segment is off. Using the arrow keys, move the cursor to the

segment to be changed and use the space bar to turn the time segment off. Use any other key to turn the segment on.

BEGINNING AND ENDING DATES . Each Time Zone (except Time Zone 1) may be set to begin and/or end on specified dates. Access Cards programmed into the Time Zone will not be allowed access before the beginning date (if set) or after the ending date (if set).

To set a beginning date choose “B” when in the weekly schedule. Enter the beginning date (enter “C” if no beginning date restriction is desired).

To set a ending date, choose “E” when in the weekly schedule. Enter the beginning date (enter “C” if no ending date restriction is desired).

ANTIPASSBACK CONTROL . The Time Zone into which an Access Card is programmed determines if and how the Access Card is affected by the Antipassback restriction. A Time Zone may be set to one of the following Antipassback types:

1- Timed Hard
2- Timed Soft
3- Real Hard
4- Real Soft
5- Off

NOTE: Since Time Zone 1 has no restrictions, cards programmed into Time Zone 1 are not affected by Antipassback.

REAL HARD If the Time Zone is set for Real Hard Antipassback, a Remote Reader is also required. The Primary Reader is designated as either IN or OUT; then the Remote Reader is automatically becomes the opposite type. Once used in the IN reader, an access card must be used in the OUT reader before a second use at the IN reader.

TIMED HARD If the Time Zone is set for Timed Hard Antipassback, once used, an access card must wait the full waiting time before access is again allowed. This applies to both Primary and Remote readers.

REAL SOFT If the Time Zone is set for Real Soft Antipassback, basic operation is similar to Real Hard Antipassback. The term “soft” means that access will not be denied to cards used twice in succession at an IN reader, but that an error message will be recorded and sent to the PC (if monitoring real-time transactions) or Printer (if connected).

TIMED SOFT If the Time Zone is set for Timed Soft Antipassback, access will not be denied to cards used twice in succession before the Antipassback Waiting Time has expired, but an Antipassback error message will be recorded and sent to the PC (if monitoring real-time transactions) or Printer (if connected). This applies to both Primary and Remote Readers.

If a Time Zone is set to Antipassback “Off”, Access Cards programmed into that Time Zone will not be affected by Antipassback.

To set the Time Zone Antipassback status, choose “A” when in the Weekly Schedule. Then choose 1 - Timed Hard, 2 - Timed Soft, 3 - Real Hard, 4 - Real Soft, 5 - Off, or ESC to exit.

DOOR UNLOCK TIME ZONE

The Door Unlock Time Zone is a special Weekly Schedule that puts the **ENTRACOMP® 28SA-Plus** into the Door Unlock Mode during days of the week and times of the day where time segments are set to be “on.” To set or edit the Door Unlock Time Zone, choose 4 (System Settings) from the Main Menu. Then choose 8 (Time Zones) from the System Settings Menu and 2 (Door Zone) from the Time Zone Menu.

Once in the Weekly Schedule for the Door Time Zone, select the number of the day to be edited. The cursor will move up to the day chosen. An "*" indicates the one half-hour segment is on, a blank space indicates that the segment is off. Using the arrow keys, move the cursor to the segment to be changed and use the space bar to turn the time segment off. Use any other key to turn the segment on. The **ENTRACOMP® 28SA-Plus** will be in the Door Unlock Mode during those time segments that are "ON".

Choose D to set the Door Zone Mode Option, which allows a Door Zone to be set to either (A) Auto Open or (C) Card Open. In Auto Open Mode, the door unlocks automatically when the Door Zone begins. In Card Open Mode, the door remains locked when the Door Zone begins, and unlocks when the first valid card is used. Card Open Mode should be selected when it is important that the controlled door remains locked whenever the reader location is unattended.

DEFINE HOLIDAYS

Up to 32 holidays may be defined. When one of the defined holidays occurs, the holiday schedule of the particular time zone is followed rather than the weekday schedule. Holidays may be defined for the particular year or they may be defined to re-occur every year. If a particular year is entered when defining a holiday, the Weekly Time Zone schedule will treat only that date of the year specified as a holiday. If, instead of entering a year, a "Y" is entered, then the specified date will be treated as a holiday every year.

To define or edit the Holiday list, choose 4 (System Settings) from the Main Menu. Then choose 8 (Time Zones) from the System Settings Menu and 3 (Define Holidays) from the Time Zone Menu.

Once in the Holiday Setting Menu, select the number of the Holiday to be set or edited and enter the appropriate date.

DAYLIGHT SAVINGS TIME

The **ENTRACOMP® 28SA-Plus** provides Automatic and Manual Daylight Savings Time correction. In the Automatic Mode, Daylight Savings Time is corrected on the first Sunday in April and the last Sunday in October at 2:00 AM every year. The Manual Mode is provided to allow the user to set the beginning and ending Daylight Savings Time dates in areas where the Automatic mode does not correspond to the actual days of change.

For areas where there is no Daylight Savings Time, the correction function may be disabled. The factory default is Automatic Daylight Savings Time Correction.

To set the Daylight Savings Time Correction status, choose 4 (System Settings) from the Main Menu. Then select 8 (Time Zones) from the System Settings Menu followed by 4 (Daylight Savings Time) from the Time Zone Menu. The Daylight Savings dialog box will show the current mode and the current beginning and ending dates for Daylight Savings Time. Choose “A” to select the Automatic Mode. Choose “O” to deactivate Daylight Savings Time Correction. To set the unit for Daylight Savings Time dates of your choice, choose “M” (Manual) and then enter the desired beginning and ending dates by choosing “B,” then “E.”

TRANSACTIONS

The **ENTRACOMP® 28SA-Plus** stores 5000 date and time stamped transactions. When the transaction buffer is full, the oldest entries are deleted as new transactions occur; therefore, the newest transactions are always available.

DISPLAY STORED TRANSACTIONS

To display the transactions that are stored in the transaction buffer, choose 6 (Transactions) from the Main Menu and then 1 (Display Stored Transactions) from the Transaction Menu. Transactions will be displayed in reverse chronological order (newest transactions first).

DISPLAY TRANSACTIONS AS THEY OCCUR

Transactions may be displayed to the screen of the PC or terminal as they occur. When in this mode, the automatic log off feature is disabled. Error messages will also include a bell or buzzer sound (depending on the terminal or PC used).

To put the **ENTRACOMP® 28SA-Plus** into the Display Transactions As They Occur mode, choose 6 (Transactions) from the Main Menu followed by 2 (Display Transactions As They Occur) from the Transaction Menu.

DISPLAY TRANSACTION BUFFER STATUS

The Transaction Buffer is where transactions are stored. The user may examine the status of the Transaction Buffer by choosing 6 (Transactions) from the Main Menu followed by 3 (Display Transaction Buffer Status).

The screen will display how many transactions are currently in the transaction buffer, what percentage of the buffer is used, and, if more transactions occurred than there was room to store, how many transactions were lost.

CLEAR TRANSACTION BUFFER

To clear (erase) the Transaction Buffer, choose 6 (Transactions) from the Main Menu and then 4 (Clear Transaction Buffer) from the Transaction Menu.

UTILITIES

SELF TEST

The Self Test feature is normally used by your serviceman to check out the **ENTRACOMP® 28SA-Plus**. When run, the Self Test checks various functions of the unit.

To run the Self Test, choose 7 (Utility) from the Main Menu and then select 1 (Self Test) from the Utility Menu.

UPLOAD/DOWNLOAD

The settings and card status of a 28SA-Plus unit may be uploaded (backup) to a file on your PC. This file may then be downloaded (restore) to any compatible 28SA-Plus unit to program it exactly as the original unit. The Transaction Buffer, Date, and Time are not downloaded. Note that 28SA-Plus and earlier 28SA backup files are **not** compatible.

In order to download the **ENTRACOMP® 28SA-Plus** settings, Secura Key's SA-LINK™ or SA-NET™ software can be used. If using SA-LINK™, be sure to run it from DOS, and not from Windows' DOS Shell. See the instructions provided with your software.

BACKUP. To copy the settings and card status of an **ENTRACOMP® 28SA-Plus** to a file, choose 7 (Utility) from the Main Menu. Then choose 3 (Receive Settings From **ENTRACOMP® 28SA-Plus**).

If you are using SA-LINK™ or SA-NET ™, a list with one or more DOS file names will appear on the PC screen. Use the arrow keys to move the highlight and select a file name and press ENTER, or if no file names are displayed (or

to make a new file name) press ESC. You will be prompted: Enter File Name. Type in an 8-character file name with no extension (the program will add the .BIN extension for you). The resulting backup file will appear under the selected name in the SANET or SALINK directory (or wherever the software is stored on your PC).

If you are using a generic terminal program, at this point you will be prompted to create a binary receive file in which to store the settings. You must also at this time choose the appropriate receive file and settings within your terminal program to begin the transfer of data using XMODEM protocol with checksum.

When the transfer is completed, the message "File Transfer OK" with be displayed.

RESTORE. Restore is the opposite of Backup. This function sends the settings and card status that were transferred from (Backup) an **ENTRACOMP® 28SA-Plus** and sends them to an **ENTRACOMP® 28SA-Plus**. To restore settings, choose 7 (Utility) from the Main Menu and 2 (Send Settings To 28SA-Plus) from the Utility Menu. The screen will prompt the user "Transferring Config File From PC To Reader Now."

At this point, the user should begin the binary file transfer of the file using the XMODEM with checksum protocol as per the directions of the terminal program in use. If you use **Secura Key's SA-LINK™** or **SA-NET™** programs, these settings are handled automatically.

When the transfer is complete, the screen will say, "File Transfer OK". If an error occurs, an "Error Transferring File" message will be given.

RE-INITIALIZE. This command is used by your serviceman to restore all settings to factory defaults. All card programming, time zones and transactions will be erased. Choose 7 (Utility) from the Main Menu and select 4 (Re-initialize) from the Utility Menu.

USING A PRINTER WITH THE 28SA-PLUS

A serial printer may be connected to the **ENTRACOMP® 28SA-Plus** in order to print transactions as they occur and print transactions stored in the transaction buffer. **The wiring for a printer is different than the wiring for a computer or terminal. Be sure to follow the wiring instructions carefully.**

There are two ways to put the **ENTRACOMP® 28SA-Plus** into the printer mode; Hard wiring or using the program deck.

HARD WIRED PRINTER MODE. Power down the unit. Connect together the RXD and RTS terminals on the terminal block (terminals 2 and 4). Re-power the unit. To leave the printer mode you must power down the unit, remove the connection between the RXD and RTS terminals and re-power the unit.

PRINTER MODE USING THE PROGRAMMING DECK. Touch the "✱" and the "VALID" programming cards in succession. To leave the printer mode, again touch the "✱" and the "VALID" programming cards in succession.

When in the printer mode the **ENTRACOMP® 28SA-Plus** will send to the printer transactions as they occur. To print the transactions stored in the Transaction Buffer of the **ENTRACOMP® 28SA-Plus**, touch the "✱"programming card to the **TOUCH CARD®** reader plate **twice in succession**. The entire log of entries contained in the buffer will begin to print. Transactions are printed in last-in, first-out order.

Should you wish to terminate the print-out before complete, again touch the "✱" programming card to the **TOUCH CARD®** reader plate twice in succession. The unit will then go back to printing transactions as they occur. To clear the history buffer, touch the "✱" and the "VOID" cards in succession.

COMMAND MODE

Command Mode is a method of communicating with an **ENTRACOMP® 28SA-Plus** without using the menu system. Most unit functions, including Programming Cards or settings, controlling modes of operation, and acquiring card or transaction status/history are accessible through Command Mode. Reader Configuration and Time Zones must be defined in Terminal mode. Command mode has been designed for use by programmers and systems integrators to facilitate computer to **ENTRACOMP® 28SA-Plus** communications. Contact your dealer for a complete description of Command Mode.

INSTALLATION

CAUTION SHOULD BE TAKEN NOT TO TOUCH CIRCUIT BOARD OR ELECTRONIC COMPONENTS PRIOR TO INSTALLATION TO AVOID ELECTRO-STATIC DISCHARGE (ESD) DAMAGE.

WARNING

AN EARTH GROUND IS REQUIRED. Connect the green screw on the mounting plate to a good earth ground (AC Power Ground or a 10 foot copper ground stake) using a 16AWG solid copper wire. Failure to do so may result in improper operation or damage to the unit. (See Figures 11 - 21). Flush Mount and Metal Housing models also have a green ground wire, which must be attached to the green screw on the mounting plate.

WARNING
DO NOT APPLY POWER TO UNIT UNTIL
ALL CONNECTIONS ARE MADE AND CHECKED

GENERAL WIRING INSTRUCTIONS

For ease of installation and servicing, the **ENTRACOMP® 28SA-Plus** is provided with a terminal board which is connected to the main unit via a ribbon cable and connector. The screw terminals on the circuit board will accept wire gauges #16 through #24, solid or stranded. Strip approximately 5/16" (8mm) of insulation, insert into the appropriate hole, and tighten with a small screwdriver. Tinning is strongly recommended for stranded wires (see Figure 2 for proper terminations). Arrange a cable drip loop on all exterior installations.

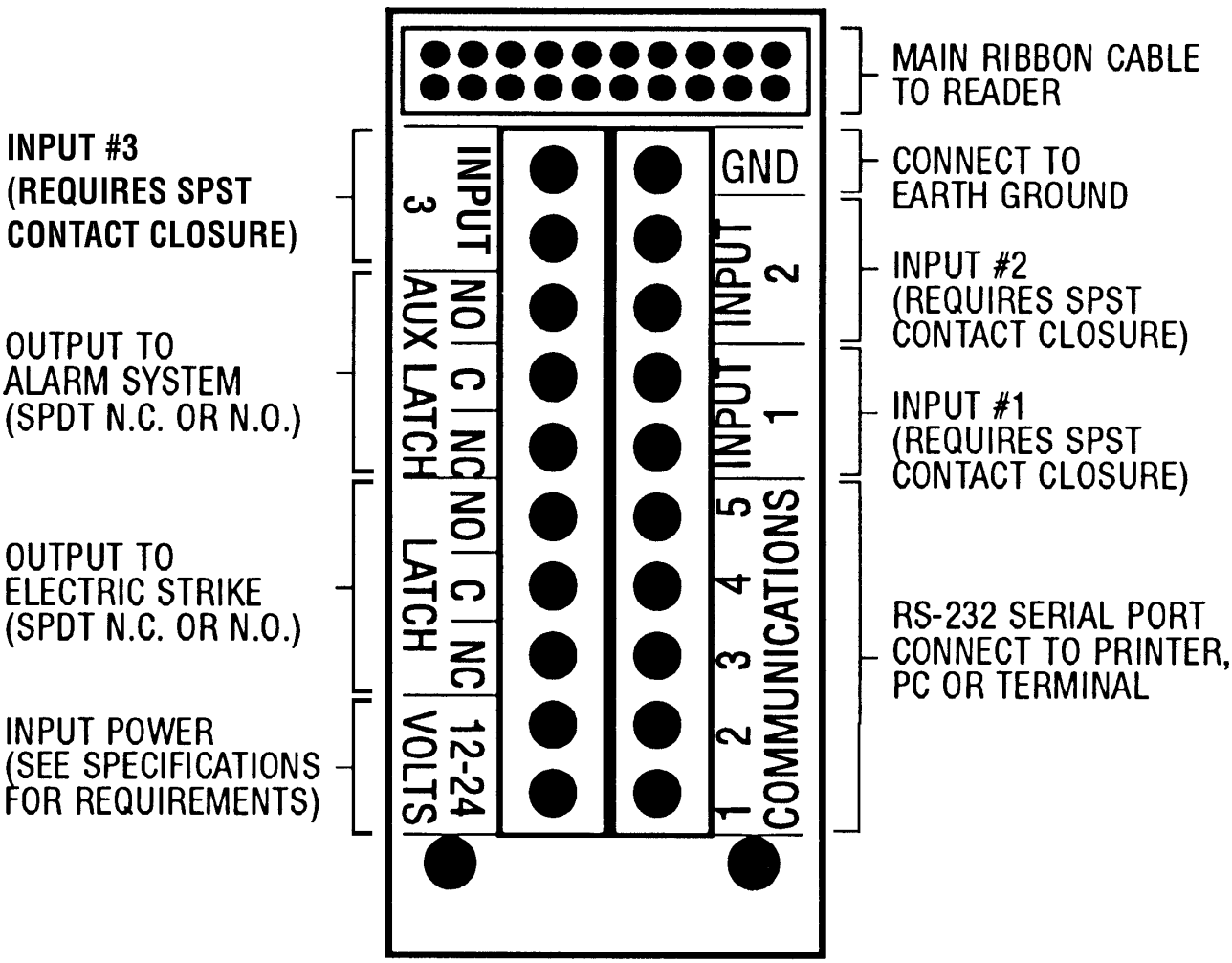

MAIN RIBBON CABLE TO READER
INPUT #3 (REQUIRES SPST CONTACT CLOSURE)
CONNECT TO EARTH GROUND
INPUT #2 (REQUIRES SPST CONTACT CLOSURE)
OUTPUT TO ALARM SYSTEM (SPDT N.C. OR N.O.)
INPUT #1 (REQUIRES SPST CONTACT CLOSURE)
OUTPUT TO ELECTRIC STRIKE (SPDT N.C. OR N.O.)
RS-232 SERIAL PORT CONNECT TO PRINTER, PC OR TERMINAL
INPUT POWER (SEE SPECIFICATIONS FOR REQUIREMENTS)
GND
INPUT 2
INPUT 1
COMMUNICATIONS
INPUT 3
AUX LATCH
LATCH
12-24 VOLTS
NO
C
NC
NO
C
NC
1 2 3 4 5

FIGURE 2

PASSAGEWAY CONTROL

The double-pole, double-throw relay is activated whenever a valid entry is generated. The latch output from the relay is on the terminal board (see Figure 2) and is used to operate the door operating device. The aux latch output may also be used to operate a device or to bypass an alarm sensor. Example below is for an electric strike; a magnetic lock would be connected to the **C** and **NC** terminals.

Figure 3 illustrates a typical installation.

TYPICAL WIRING DIAGRAM

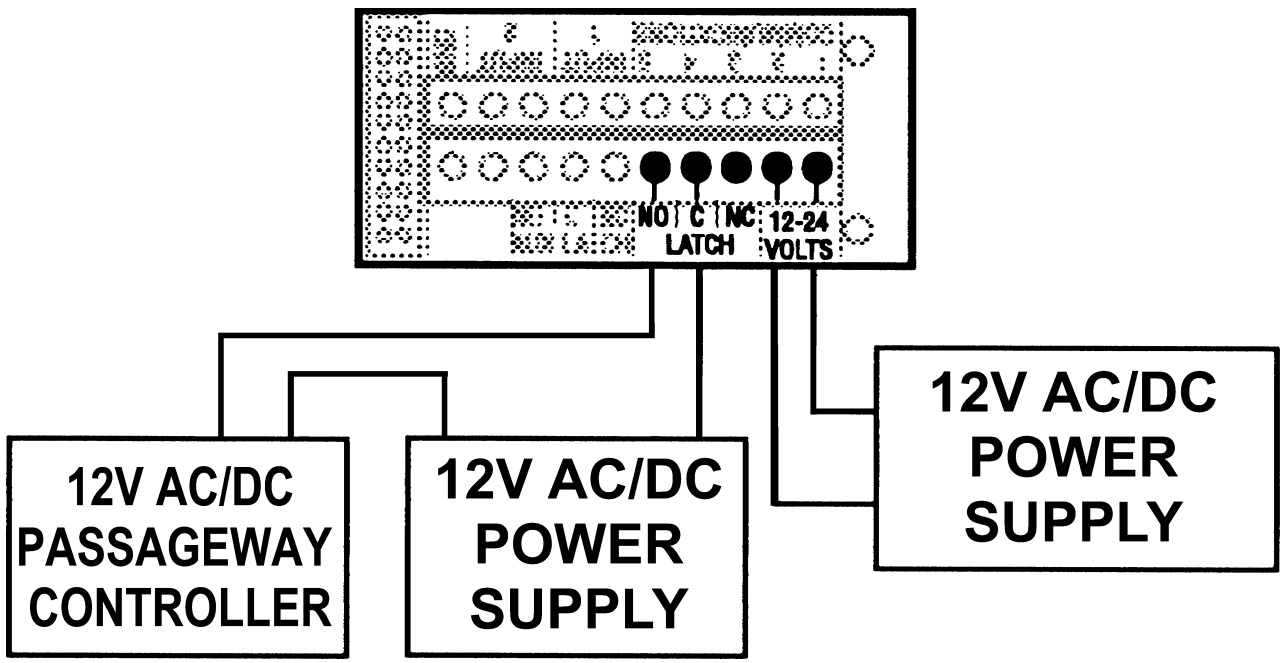


FIGURE 3

COMMUNICATIONS WIRING FOR SINGLE-READER SYSTEMS

IMPORTANT

Wiring information in this section applies only to single-reader applications. For 28SA-Plus's used with the SK-SS Smart Switch, use wiring information provided with that device or with the software.

The **ENTRACOMP® 28SA-Plus** is designed to communicate with a printer, terminal, personal computer or a modem, using an RS-232 interface. **The wiring for a printer cable is different from the wiring for a PC or Terminal.** (see Figures 2 through 9 for communications wiring instructions).

Cable distances of up to 300 feet (100 meters) are possible, using high-quality shielded cable, with the shield connected to Earth ground at the reader end. Recommend 5-conductor, 18-24 AWG shielded cable, such as Belden 9535 (24 AWG), 9610 (24AWG), 9910 (24AWG), 9941 (22 AWG), or where Plenum rated cable is required, Belden 83506 Teflon insulated (24 AWG). Most cable manufacturers offer Belden equivalents. **DO NOT USE un-shielded and/or twisted pair wire, such as "Category 5" for RS-232 communications.**

Route communications wiring away from equipment that generates RF interference, such as transmitters, fluorescent light ballasts, large motors, compressors, elevators, etc.

Whenever communications cable runs enter or exit a building, lightning transient suppressors are strongly recommended at both ends of those cables. Parking lot, pool gate, marina and tennis court applications with long buried cable runs are susceptible to nearby lightning strikes, and unprotected Readers, PC's, and Printers are frequently damaged. Contact Secura Key for additional information on lightning suppression.

Wire runs of up to 4,000 feet are possible using “line drivers” (RS-232/422 converters). One converter is required **at each end** of a **two-twisted pair** overall-shielded cable. Each converter will require AC power. If you have already pulled wire for RS-232 and need to add RS422 converters, new twisted-pair cable must be pulled. Contact Secura Key for the correct converter model for your specific application.

MODEM COMMUNICATIONS. The **ENTRACOMP® 28SA-Plus** has been designed to communicate with a PC or terminal via modem in **auto answer mode** with any Hayes compatible modem (minimum 1200 baud). The modem must be properly configured for operation with the **28SA-Plus**. This is done by connecting the modem to the serial port of a PC, running a terminal program (supplied with most modems), and by entering a setup string. Be sure that during modem setup, the terminal program is communicating with the modem at the same Baud rate that the **28SA- Plus** will be communicating. Note that some modems also require DIP Switch settings. Also note that if using SA-LINK™ or SA-NET ™, you must install DOS modem driver software in your PC, even if your PC is running Windows.

For example, to configure a US Robotics Sportster 14.4, 28.8, 33.6 or 56 kBaud modem, you would type in the following string of characters (note that 0 = zero):

AT&R1&D0&S0&H0S0=1&W0 [ENTER]

Then set DIP switches 1, 4, and 6 to ON and all others to OFF. Disconnect the modem and connect it to the reader.

Other modems may require a different setup string. Also refer to your modem manual. For further information, contact Secura Key.

RJ-11 JACK CONNECTION . For temporary connections, an RJ-11 (telephone type) jack is provided on the bottom of the unit housing to allow communications access without the necessity of opening the unit.

WARNING

DO NOT CONNECT THE 28SA-Plus' RJ-11 JACK TO A TELEPHONE LINE, PBX, OR THE PHONE OUTPUT OF A MODEM, OR SERIOUS DAMAGE MAY RESULT.

if you are not using the RJ-11 jack, you may disable this communication port by unplugging the jack input connector on the main circuit board (see Figure 1).

TERMINAL BOARD CONNECTION. For permanent (hard-wired) connection, communications wiring may be connected to the unit via the terminal board (see Figure 2 for wiring).

SERIAL PRINTER CONNECTION. Figures 4 and 7 show how to connect a serial printer to the system. Most serial printers have dip switch settings to select data protocols. Make sure the printer is configured for pin #20 to be "Ready Busy". See page 6 for proper settings. If a serial printer is not available, a serial-to-parallel converter may be used to connect a parallel printer. If you have difficulty printing, refer back to page 40.

TERMINAL/PC CONNECTION. Figures 4, 5, and 6 show wiring the **ENTRACOMP® 28SA-Plus** to a terminal or PC. Figure 6 shows wiring for a DB-9S female connector. Figure 5 shows wiring for a DB-25S female connector. Your PC may have either type of connector on its serial communications ports, COM 1, 2, 3 or 4.

SK-SS SMART SWITCH. **Do not use the wiring shown in Figure 4 to connect the reader to a PC or Printer via the Smart Switch.** Refer to the wiring information provided with the Smart Switch.

REMOTE READER CONNECTION

WARNING

ALWAYS REMOVE POWER FROM THE 28SA-Plus BEFORE CONNECTING THE REMOTE READER.

The **ENTRACOMP® 28SA-Plus** provides power for the remote reader (Figures 1 and 10). The SK-029W **TOUCH CARD®** Reader is used as the second (remote) reader to control access through a single passageway or a single parking lot lane in the opposite direction. The two readers are distinguished in the transaction log and printout. If timed antipassback is to be used, the waiting time will apply to both readers (the **ENTRACOMP® 28SA-Plus** and the SK-029W) no matter which reader is used. If real antipassback is used, the remote and main readers must be used alternately; neither reader can be used twice in a row by an individual card holder.

The remote reader does not have its own latch relay. Using a valid card in either reader will activate the latch relay on the **ENTRACOMP® 28SA-Plus**.

Other devices with either a Secura Key 31-bit or 26-bit Wiegand output may be also be connected to the Remote Reader Input. Various transmitter-type gate openers, bar code scanners, and proximity readers are available with a Secura Key 31-bit or standard 26-bit Wiegand output format.

Note that these other Wiegand-output devices may need their own power supplies, since the Remote Reader output voltage varies, depending on the input voltage as follows:

DC Voltage Out: = AC Voltage In x 1.3 **OR** DC Voltage In x 0.9

Recommended input voltage to the 28SA Plus with a Remote Reader is 12 - 16 Volts AC or DC. Lower voltages will be insufficient to operate the SK-029W reader; higher voltages will cause the reader's voltage regulator to run hot, which could cause early component failure.

Note also that the Remote Reader LED output provides +5 VDC for Red, Ground for Green, and Floating for Off, which may not be compatible with indicator lights on all reading devices. Please contact the factory for details.

PIN NUMBER CONNECTIONS					
ENTRACOMP® 28SA Plus		PC OR TERMINAL		PRINTER	MODEM
SIGNAL DESCRIPTION	TERMINAL BLOCK #	DB-25S (FEMALE) PIN #	DB-9S (FEMALE) PIN #	DB-25P (MALE) PIN #	DB-25P (MALE) PIN #
SIGNAL GROUND	1	1 & 7	5	1 & 7	7
RECEIVE DATA (RXD)	2*	2	3	N/C *	3
CLEAR TO SEND (CTS)	3	4	7	20	8
REQUEST TO SEND (RTS)	4*	5	8	6 & 8	4
TRANSMIT DATA (TXD)	5	3	2	3	2
EARTH GROUND	10	N/C	N/C	N/C	1
* FOR HARD-WIRED PRINTER MODE, CONNECT TERMINAL 2 TO TERMINAL 4 .					

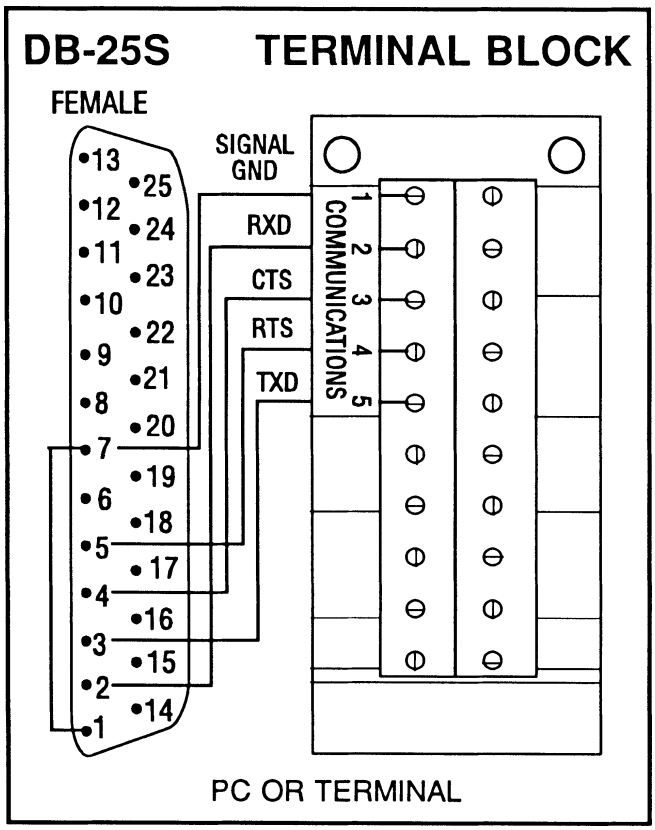

DB-25S TERMINAL BLOCK
FEMALE
SIGNAL GND
RXD
CTS
RTS
TXD
COMMUNICATIONS
1 2 3 4 5
13 25 12 24 11 23 10 22 9 21 8 20 7 19 6 18 5 17 4 16 3 15 2 14 1
PC OR TERMINAL

FIGURE 5

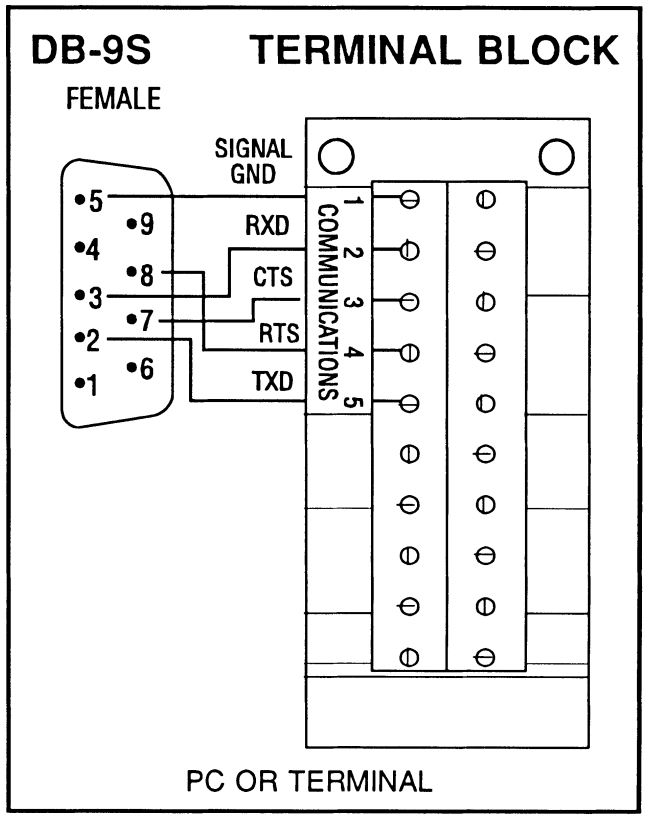


FIGURE 6

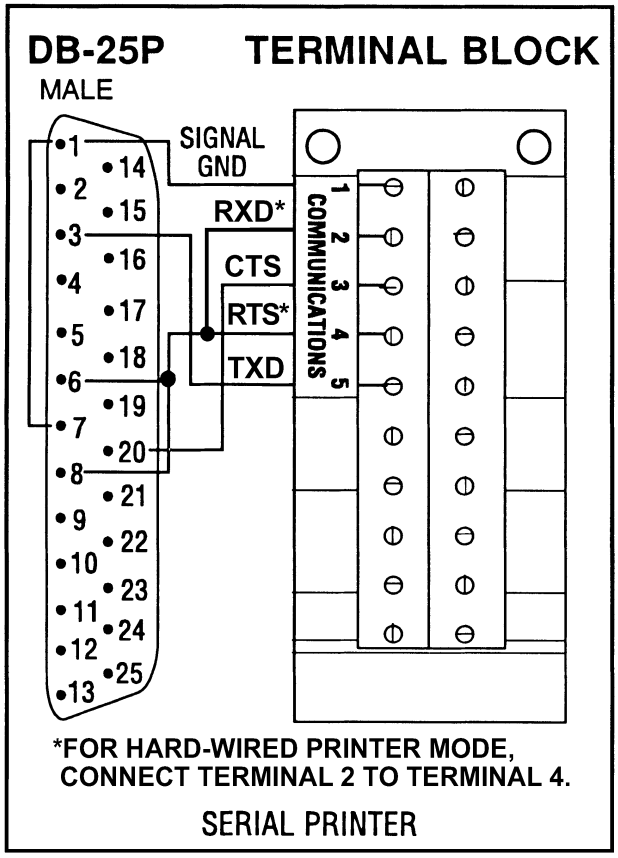


FIGURE 7

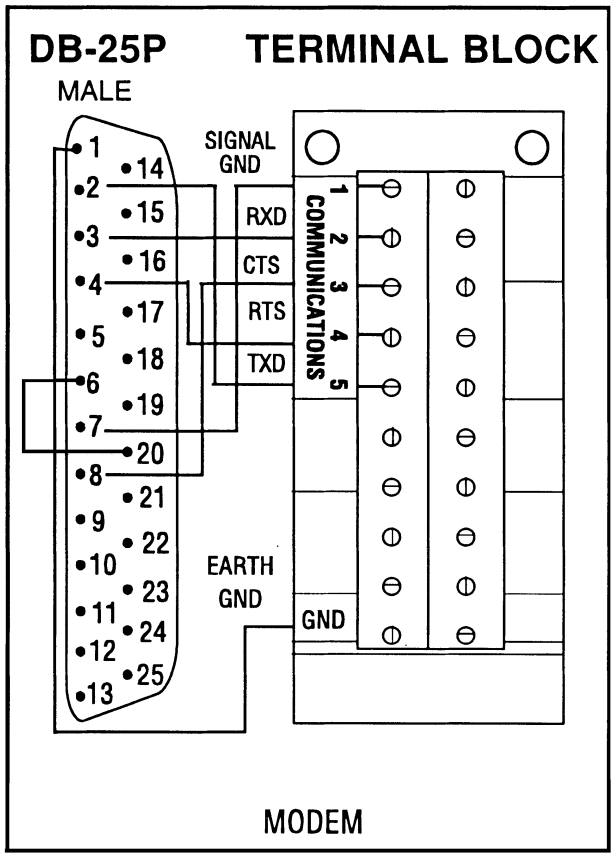


FIGURE 8

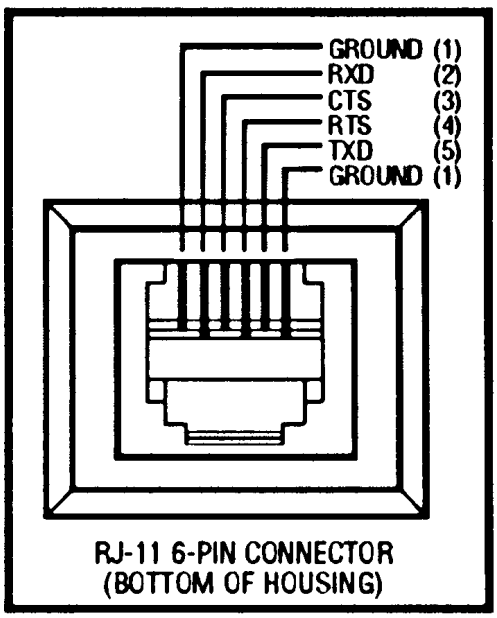


FIGURE 9

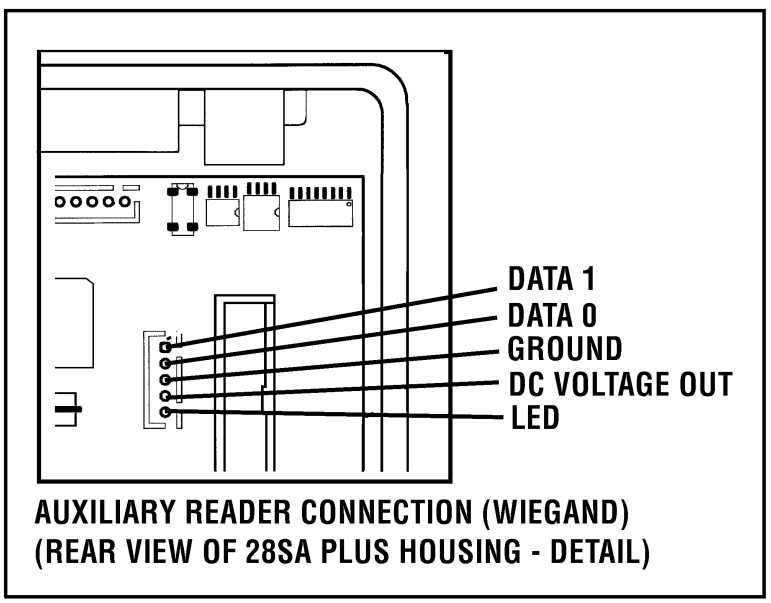
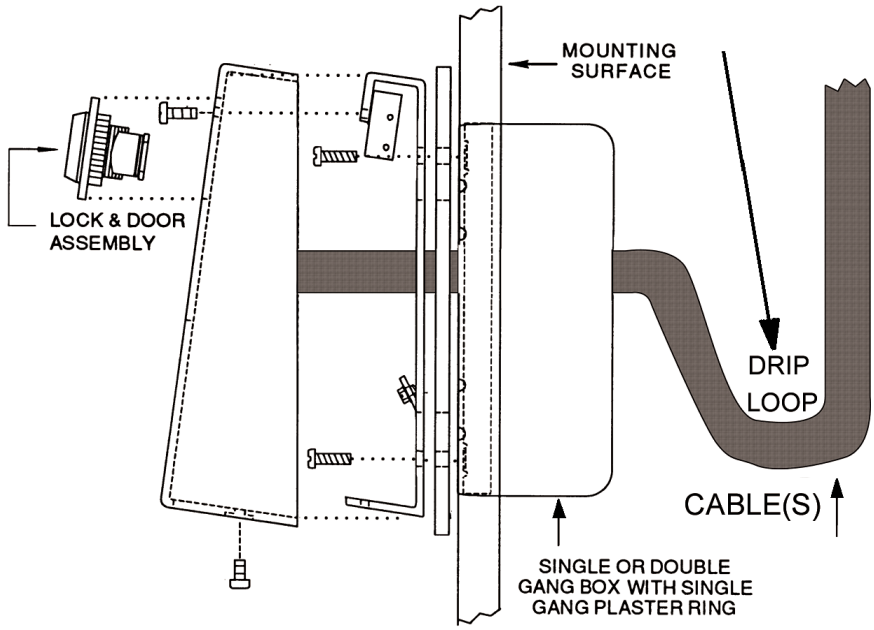


FIGURE 10

INSTALLATION INSTRUCTIONS

WARNING: A DRIP LOOP IS RECOMMENDED TO PREVENT WATER FROM ENTERING THE BACK OF ALL HOUSING TYPES.



SURFACE MOUNT TO SINGLE GANG ELECTRICAL BOX

(See Figure 11)

1. For exterior walls, apply ¼ inch bead of silicone sealant around rear perimeter surface of mounting bracket gasket. Be sure there is sufficient sealant to make a good seal between gasket and wall. Install gasket between mounting bracket and wall.

2. Use two 6-32 pan head screws (not supplied) to secure mounting plate to box.

3. Connect green grounding screw on mounting plate to Earth ground using a 16AWG wire.

4. Be sure all appropriate wiring has been connected to the terminal board, and then plug the terminal board cable into the socket on the circuit board (see wiring instructions). Do not apply power until all connections are made.

5. Place ENTRACOMP® 28SA-Plus housing against mounting plate, top edge first, centering housing on retaining tabs. Secure housing to plate at bottom using one 6-32 x 3/8 security screw (provided) or equivalent.

6. Lock cam lock.

SURFACE MOUNT WITHOUT ELECTRICAL BOX (See Figure 12)

1. For exterior walls, apply ¼ inch bead of silicone sealant around rear perimeter surface of mounting bracket gasket. Be sure there is sufficient sealant to make a good seal between gasket and wall. Install gasket between mounting bracket and wall.

2. Mount plate to wall using appropriate fasteners. Use at least four of six holes provided.

3. Connect green grounding screw on mounting plate to Earth ground using a 16AWG wire.

4. Be sure all appropriate wiring has been connected to the terminal board, and then plug the terminal board cable into the socket on the circuit board (see wiring instructions). Do not apply power until all connections are made.

5. Place **ENTRACOMP® 28SA-Plus** housing against mounting plate, top edge first, centering housing on retaining tabs. Secure housing to plate at bottom using one 6-32 x 3/8 security screw (provided) or equivalent.

6. Lock cam lock.

SURFACE MOUNT TO POST (See Figure 13)

1. Mount post mount adapter (optional) to post (not supplied). Screw 1-1/2 inch pipe coupling on rear of post mount adapter plate to post until almost tight, stopping when reader cover is at top (12 O'Clock). A small tack weld is strongly suggested to keep the housing from rotating on post.

2. Apply 1/8 inch bead of silicone sealant around rear perimeter surface of mounting bracket gasket.

3. Press bracket with gasket against adapter and secure with the four 10-32 X 5/16 pan head screws provided.

4. Connect green grounding screw on mounting plate to Earth ground using a 16AWG wire.

5. Be sure all appropriate wiring has been connected to the terminal board, and then plug the terminal board cable into the socket on the circuit board (see wiring instructions). Do not apply power until all connections are made.

6. Place **ENTRACOMP® 28SA-Plus** housing against mounting plate, top edge first, centering housing on retaining tabs. Secure housing to plate at bottom using one 6-32 x 3/8 security screw provided or equivalent.

7. Lock cam lock.

SURFACE MOUNT TO FLANGE (See Figure 14)

1. Position flange mount adapter (optional) against post flange (not supplied). Locate and mark four (untapped) holes. Then drill and tap four 10-32 holes in post flange.

2. Apply silicone bead around perimeter of post flange. Place flange mount adapter against post flange and secure with four 10-32 x 1/2 flat head countersunk screws provided.

3. Follow instructions 2 - 7 for post mount adapter.

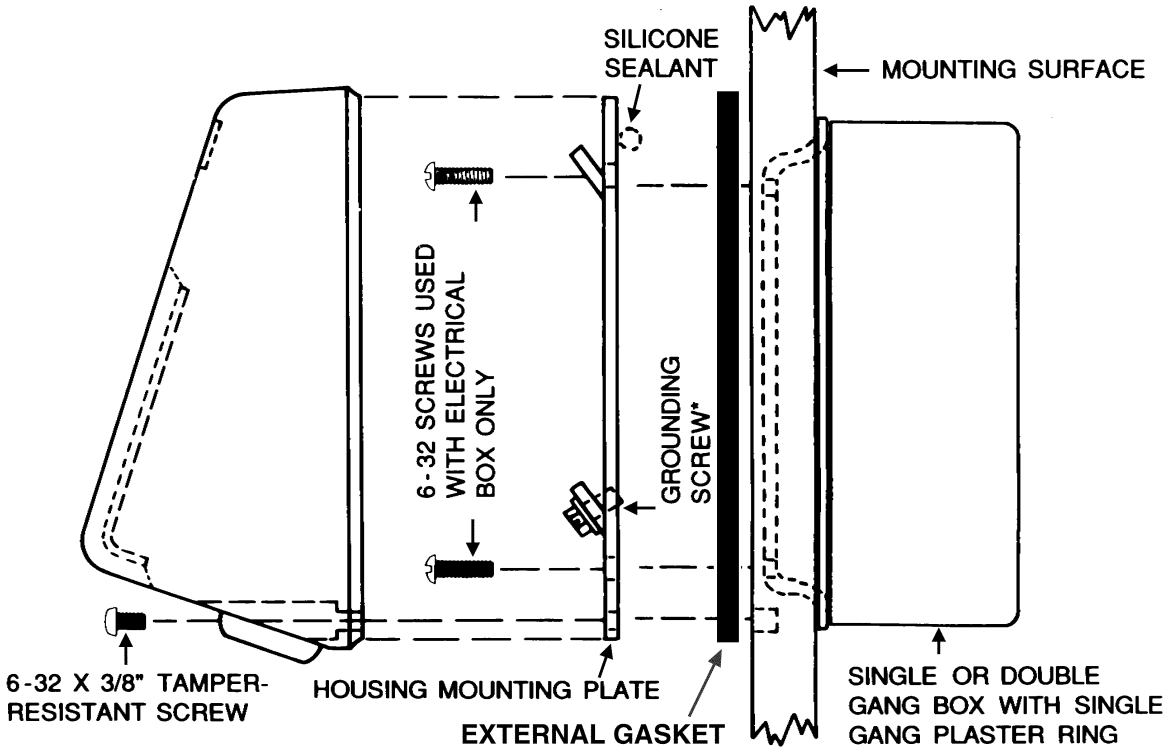


FIGURE 11

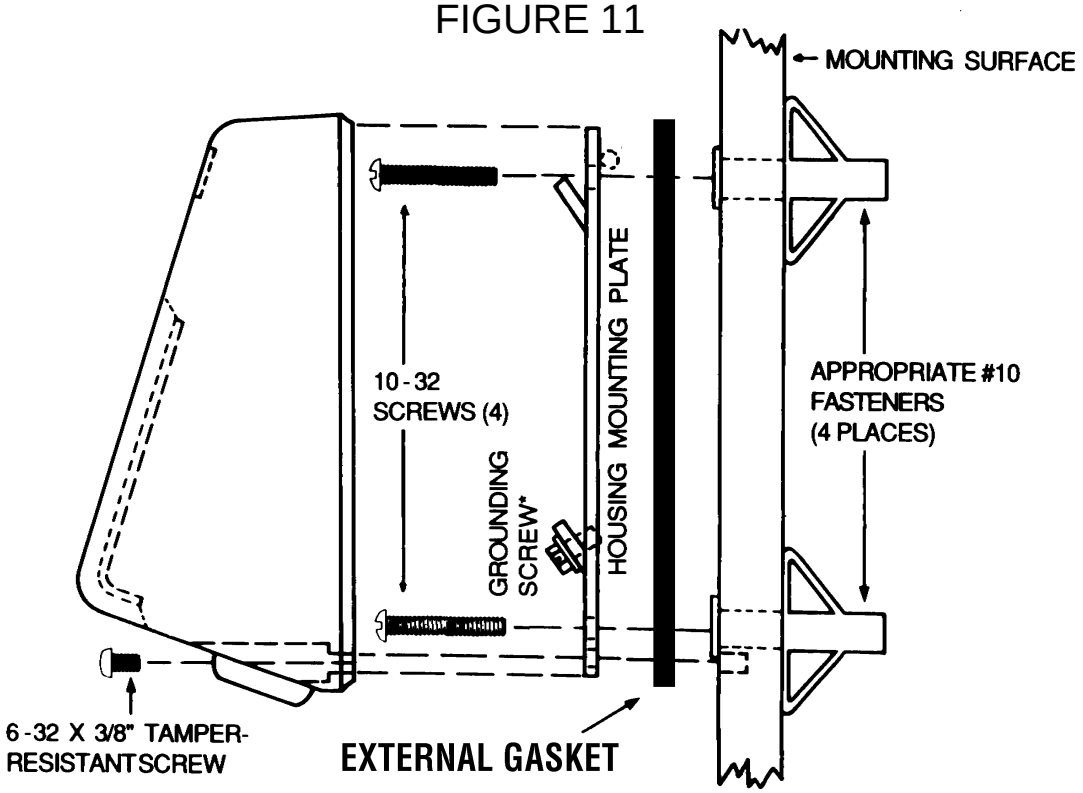


FIGURE 12

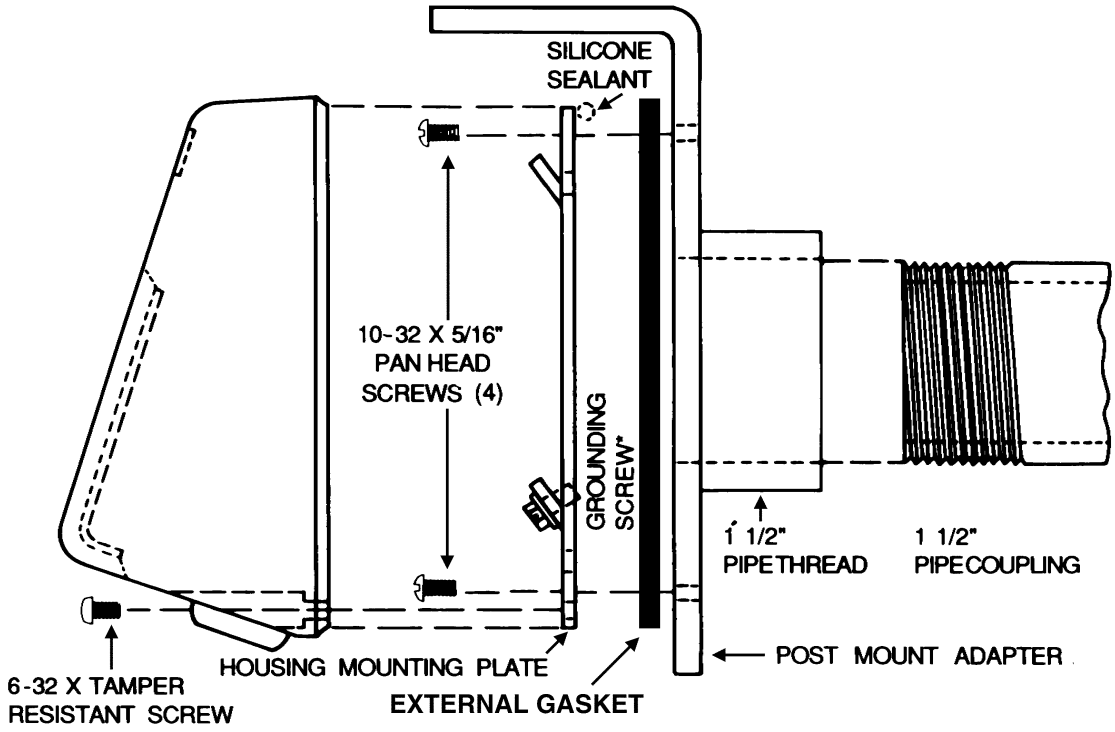


FIGURE 13

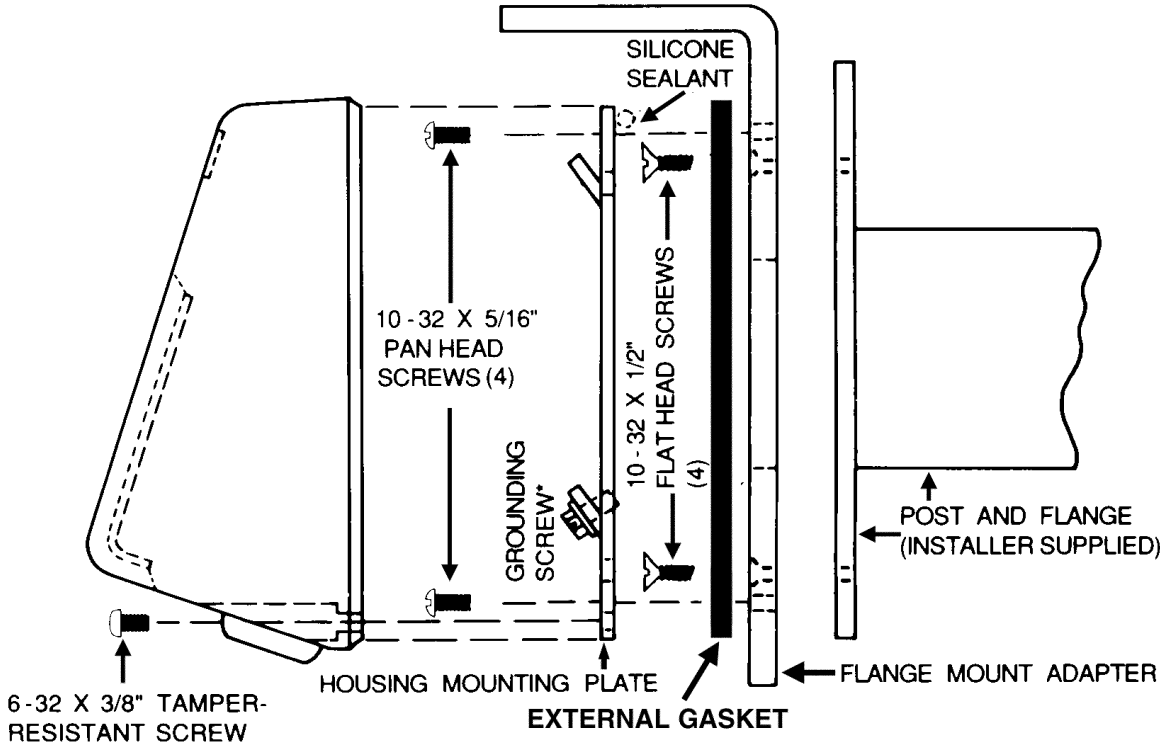


FIGURE 14

FLUSH MOUNT TO EXISTING 5S BOX (See Figure 15)

1. Use wall cutout template provided. Align template over 5S box. (When running wires to the 5S box, don't use center top hole as it will interfere with housing lock.) Transfer appropriate cutout corner locations of clearance hole for the housing lock to the wall with pointed instrument.

2. Draw lines from point to point, outlining cutout.

3. Cut out opening, being careful not to make opening larger than indicated on the template.

4. Mount mounting plate to 5S box using the four 8-32 flat head screws provided. For an outdoor installation, silicone sealant is recommended between the mounting plate and the wall.

5. Connect green grounding screw on mounting plate to Earth ground using a 16AWG wire. Also connect green ground wire from faceplate assembly to green grounding screw.

6. Be sure all appropriate wiring has been connected to the terminal board, and then plug the terminal board cable into the socket on the circuit board (see wiring instructions). Do not apply power until all connections are made.

7. Place reader and faceplate assembly against the mounting plate. Faceplate will hook onto mounting plate by pushing plate in and then sliding it down.

8. Secure faceplate to mounting plate using the two 4-40 screws provided.

9. Place faceplate door into door opening and rotate key 90° clockwise.

FLUSH MOUNT WITH 5S BOX (See Figure 16)

1. Use the wall cutout template provided. Locate template on the wall. Transfer appropriate cutout corner locations to the wall with a pointed instrument.

2. Draw lines from point to point, outlining cutout.

3. Cut out opening, being careful not to make opening larger than indicated on the template.

4. Place mounting plate against wall in its proper location. Using it as a template, mark four holes in corners. Remove faceplate, and using appropriate drill, drill four holes for appropriate fasteners (8-32 fasteners are recommended).

5. Fasten mounting plate to 5S box using the four 8-32 flat head screws provided. (When running wires to the 5S box, don't use the center top hole as it will interfere with the housing lock.)

6. Secure mounting plate and 5S box to wall. Screws must be flat head countersunk #6 or #8. Make sure any cables have been pulled into the box prior to securing assembly to wall. For an outdoor installation, silicone sealant is recommended between the mounting plate and the wall.

7. Connect green grounding screw on mounting plate to Earth ground using a 16AWG wire. Also connect green ground wire from faceplate assembly to green grounding screw.

8. Be sure all appropriate wiring has been connected to the terminal board and then plug the terminal board cable into the socket on the circuit board (see wiring instructions). Do not apply power until all connections are made.

9. Place reader and faceplate assembly against the mounting plate. Faceplate will hook onto mounting plate by pushing plate in and then sliding it down.

10. Secure faceplate to mounting plate using the two 4-40 screws.

11. Place faceplate door into door opening and rotate key 90° clockwise.

FLUSH MOUNT WITHOUT 5S BOX (See Figure 17)

1. Use the wall cutout template provided. Locate template on the wall. Transfer appropriate cutout corner locations to the wall with a pointed instrument.

2. Draw lines from point to point, outlining cutout.

3. Cut out opening, being careful not to make opening larger than indicated on the template.

4. Place mounting plate against wall in its proper location. Using it as a template, mark four holes in corners. Remove faceplate and using the appropriate drill, drill four holes for appropriate fasteners (8-32 fasteners are recommended).

5. Secure mounting plate to wall. Screws must be flat head countersunk #6 or #8. For an outdoor installation, silicone sealant is recommended between the mounting plate and the wall.

6. Connect green grounding screw on mounting plate to Earth ground using a 16AWG wire. Also connect green ground wire from faceplate assembly to green grounding screw.

7. Be sure all appropriate wiring has been connected to the terminal board and then plug the terminal board cable into the socket on the circuit board (see wiring instructions). Do not apply power until all connections are made.

8. Place reader and faceplate assembly against the mounting plate. Faceplate will hook onto mounting plate by pushing plate in and then sliding it down.

9. Secure faceplate to mounting plate using the two 4-40 screws.

10. Place faceplate door into door opening and rotate key 90° clockwise.

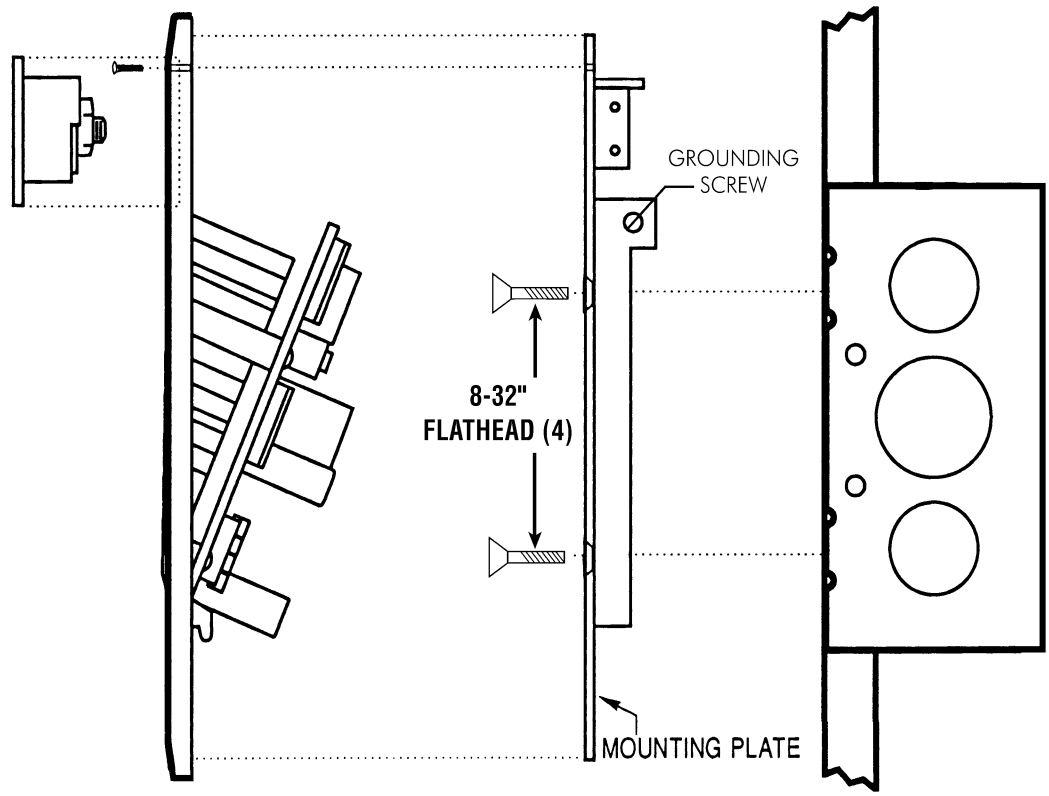


FIGURE 15

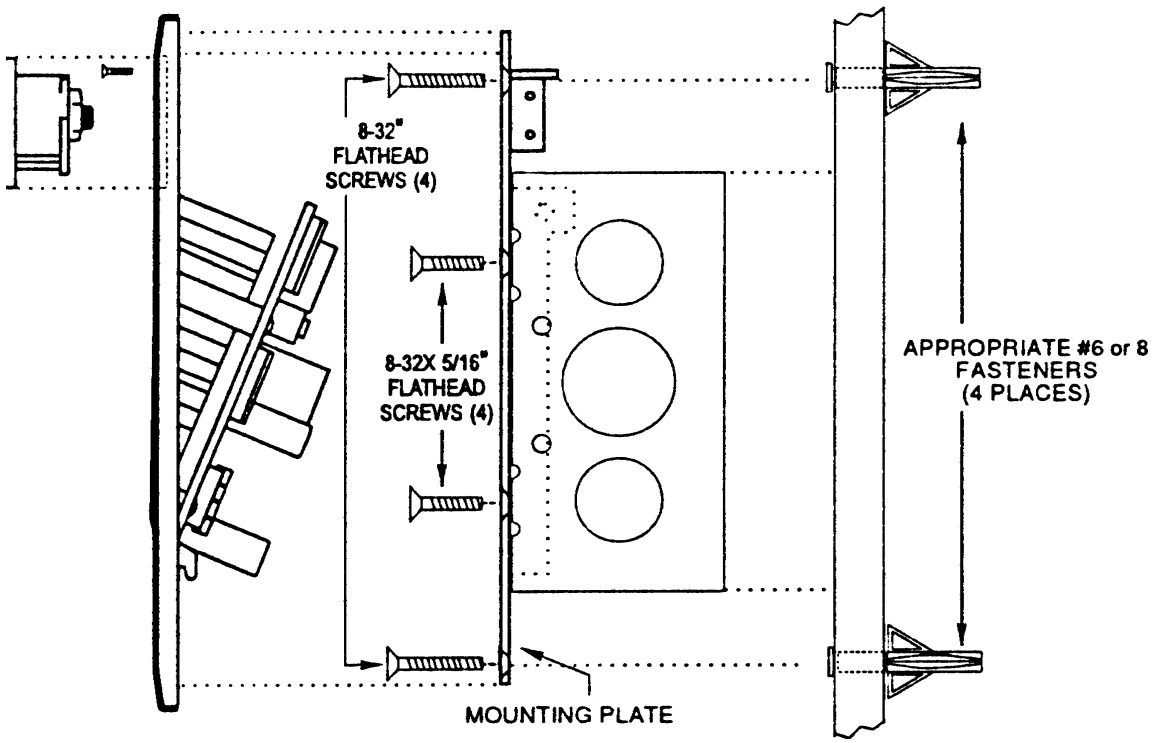


FIGURE 16

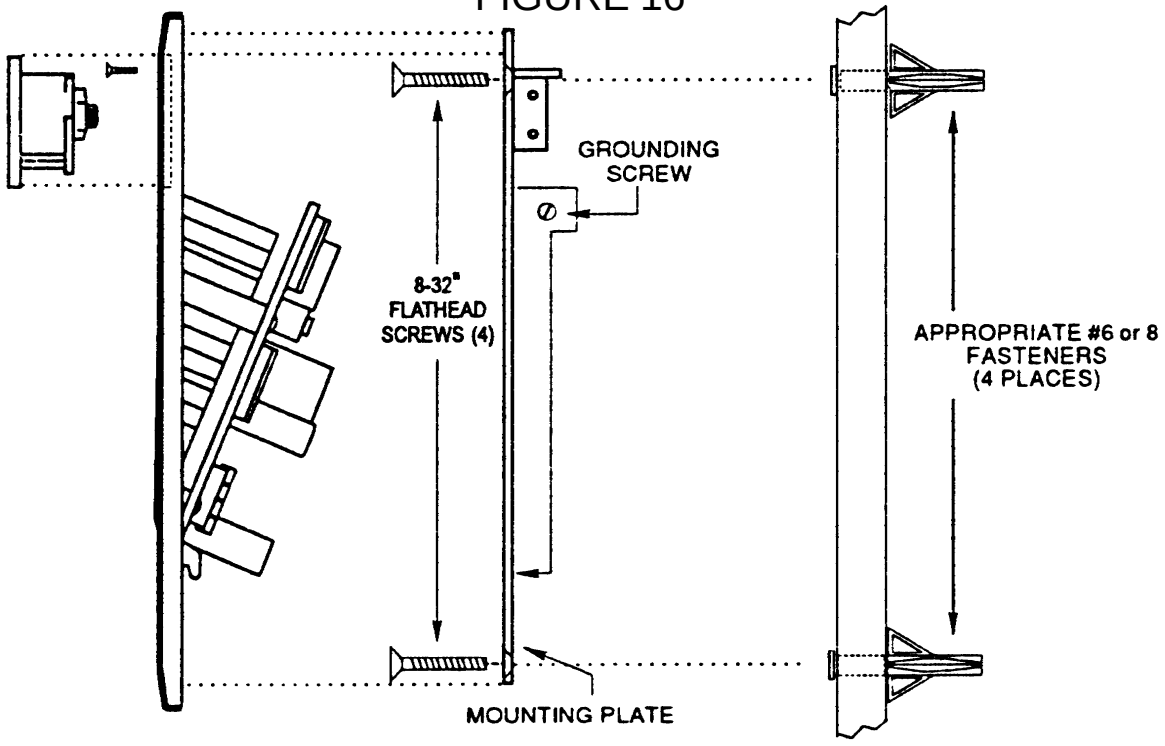


FIGURE 17

METAL SURFACE HOUSING TO SINGLE GANG ELECTRICAL BOX
(Figure 18)

1. For exterior walls, apply 1/4 inch bead of silicone sealant around rear perimeter surface of mounting bracket gasket. Be sure there is sufficient sealant to make a good seal between gasket and wall.

2. Use two 6-32 x 1 pan head screws provided to secure mounting bracket and gasket to box.

3 Connect green grounding screw on mounting plate to Earth ground using a 16AWG wire. Also connect green ground wire from faceplate assembly to green grounding screw.

4. Be sure all appropriate wiring has been connected to the terminal board, and then plug the terminal board cable into the socket on the circuit board (see wiring instructions). Do not apply power until all connections are made.

5. Place **ENTRACOMP® 28SA-Plus** housing over mounting bracket. Push housing in against wall. Secure housing to mounting bracket in door opening using two 6-32 x 3/8 screws provided. Secure housing to bracket at bottom using one 6-32 x 1/4 security screw provided or equivalent.

6. Place housing door into door opening and rotate key 90 degrees clockwise.

METAL SURFACE HOUSING WITHOUT ELECTRICAL BOX
(See Figure 19)

1. For exterior wall, apply sealant to rear perimeter of mounting bracket gasket.

2. Mount plate to wall using appropriate fasteners. Use at least four of six holes provided.

3 Connect green grounding screw on mounting plate to Earth ground using a 16AWG wire. Also connect green ground wire from faceplate assembly to green grounding screw.

4. Be sure all appropriate wiring has been connected to the terminal board, and then plug the terminal board cable into the socket on the circuit board (see wiring instructions). Do not apply power until all connections are made.

5. Place **ENTRACOMP® 28SA-Plus** housing over mounting bracket. Push housing in against wall. Secure housing to mounting bracket in door opening using two 6-32 x 3/8 screws provided. Secure housing to bracket at bottom using one 6-32 x 1/4 security screw provided or equivalent.

7. Place housing door into door opening and rotate key 90 degrees clockwise.

METAL SURFACE HOUSING WITH POST ADAPTER
(See Figure 20)

1. Mount post mount adapter (optional) to post (not supplied). Screw 1 1/2 inch pipe coupling on rear of post mount adapter plate to post until almost tight, stopping when reader cover is at top (12 O'Clock). A small tack weld is strongly suggested to keep the housing from rotating on post.

2. Apply 1/8 inch bead of silicone sealant around rear perimeter surface of mounting bracket gasket.

3. Press bracket with gasket against adapter and secure with the four 10-32 x 5/16 pan head screws provided.

4 Connect green grounding screw on mounting plate to Earth ground using a 16AWG wire. Also connect green ground wire from faceplate assembly to green grounding screw.

5. Be sure all appropriate wiring has been connected to the terminal board, and then plug the terminal board cable into the socket on the circuit board (see wiring instructions). Do not apply power until all connections are made.

6. Place **ENTRACOMP® 28SA-Plus** housing over mounting bracket. Push housing in against wall. Secure housing to mounting bracket in door opening using two 6-32 x 3/8 screws provided. Secure housing to bracket at bottom using one 6-32 x 1/4 security screw provided or equivalent.

7. Place housing door into door opening and rotate key 90 degrees clockwise.

METAL SURFACE HOUSING WITH FLANGE ADAPTER
(See Figure 21)

1. Position flange mount adapter (optional) against post flange (not supplied). Locate and mark four (untapped) holes. Then drill and tap four 10-32 holes in post flange.

2. Apply silicone bead around perimeter of post flange. Place flange mount adapter against post flange and secure with four 10-32 x 1/2 flat head countersunk screws provided.

3. Follow instructions 2 - 7 for post mount adapter.

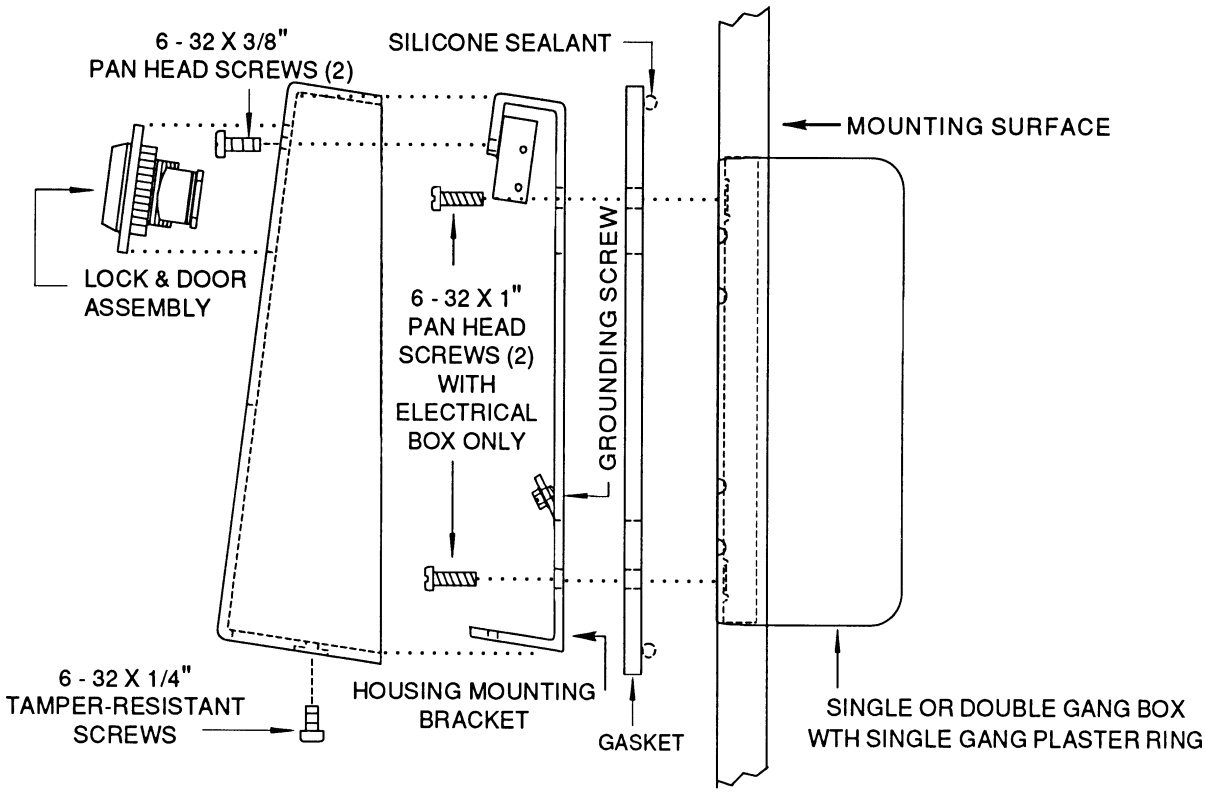


FIGURE 18

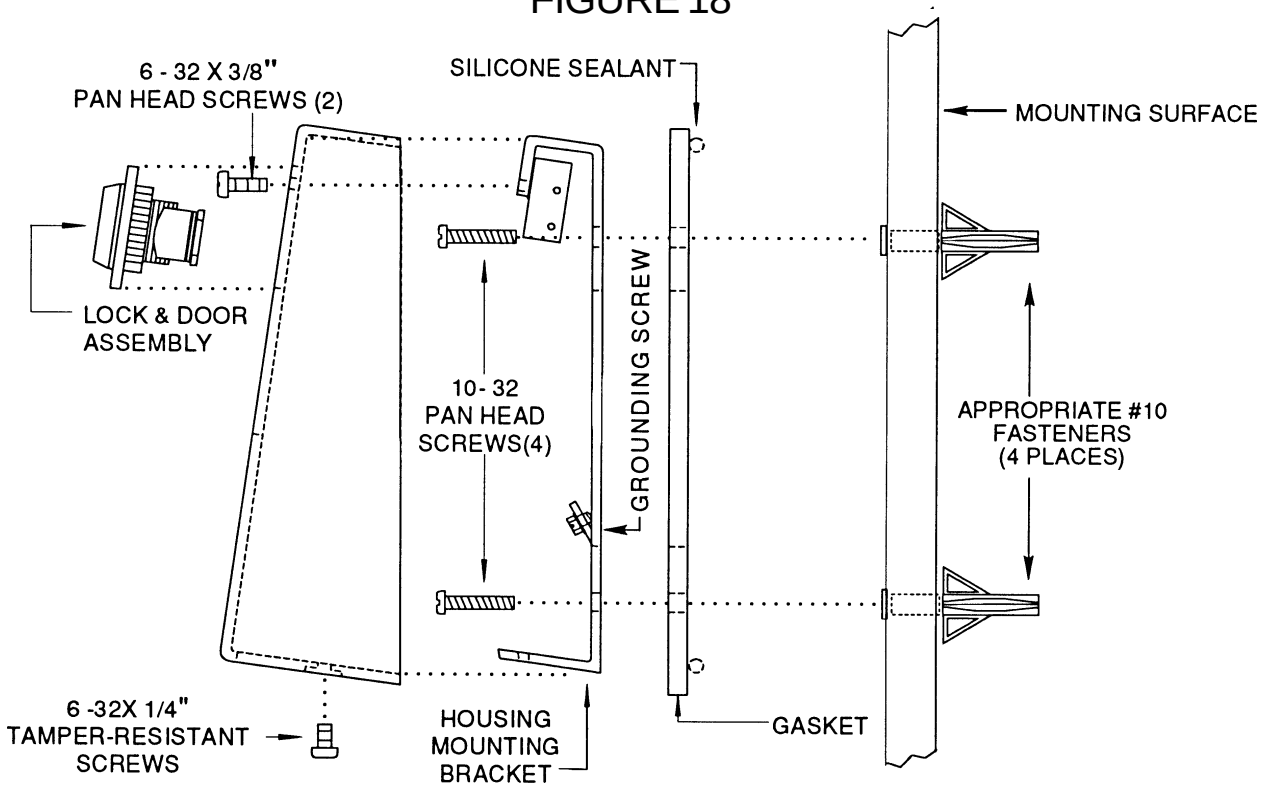


FIGURE 19

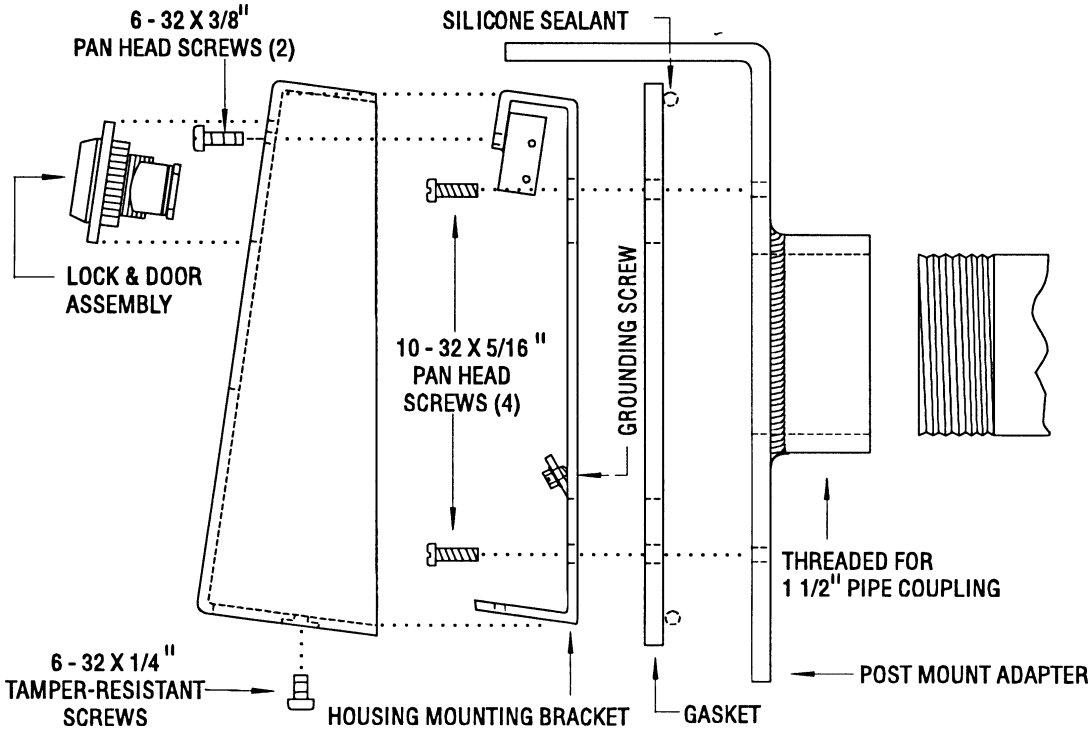


FIGURE 20

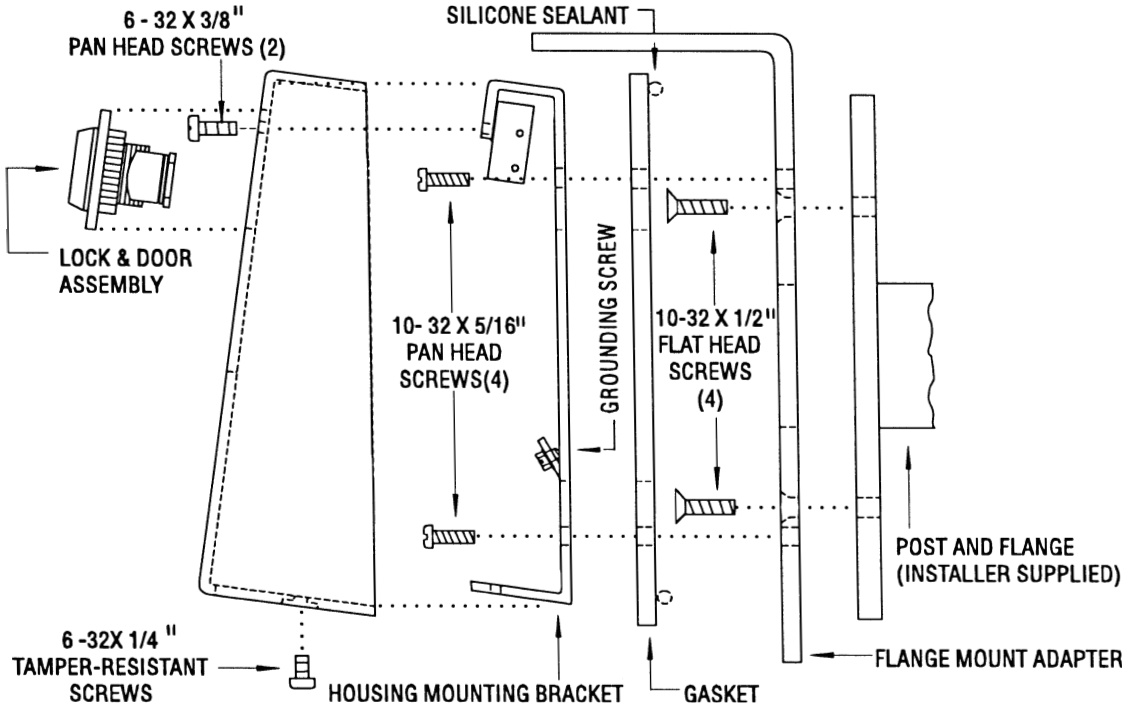


FIGURE 21

FACTORY SETTINGS

When shipped from the factory, the **ENTRACOMP® 28SA-Plus** has the following settings:

Facility Code	None
Max Cards	65503
Max limited cards	4000
Time Zones	15
Transactions	5000
All Cards	Time Zone 0 (void)
	No Limited Use
Settings	Latch timer = 1 Second
	APB Timer = 0 Minutes (off)
	Baud Rate = 9600
	Reader ID = (none)
	Password = 12345
	Date = Undetermined
	Time = Undetermined
Time Zones	APB = Timed Hard
	Date Restrictions = None
	0 = Always Void
	1 = Always Valid (no restriction)
	2 = Mon - Fri, 8am - 5:30pm
	3 = Mon - Fri, 6am - 6pm
	4 = Sat & Sun, 24 hours
	5 = Sat & Sun, 6am - 6pm
	6 = Always Valid (Timed Antipassback)
	7 & Up = Mon-Sun, 6am - 6pm
Door Zone	Off For All Time Segments
Holidays	None Set

	Daylight Savings Correction	Automatic
	Inputs	1=Door Monitor 2=Remote Open 3=Remote Inactive
Anti-Passback Parameters		
	Primary Reader (In/Out)	None
	Daily APB Forgive Hour	00

APPENDIX A
WIRING AND SYSTEM CONFIGURATIONS

CONNECTING MULTIPLE UNITS ON AN RS-485 NETWORK

Multiple 28SA-Plus units can be interconnected by installing an SK-NM485 Network Module in each reader, and connecting the readers into a network, using single twisted pair, shielded cable with a signal ground, such as Belden 9842 (includes one spare conductor). **Please note that the warranty is void on all Secura Key products if the units were damaged by surges such as lightening. It is strongly recommended that surge protectors be provided on all data, telephone and power cables in lightening prone areas. See our Bulletin #14.**

Install the SK-NM485 module by plugging it into socket J4, located on the 28SA-Plus circuit board at the top-center (Figure A2). The module has a 3-wire pigtail, which should be connected to the network cable as shown in Figure A1.

Up to 128 28SA-Plus Units can be connected on the reader network. Total combined cable distance for the entire network is 4000 feet.

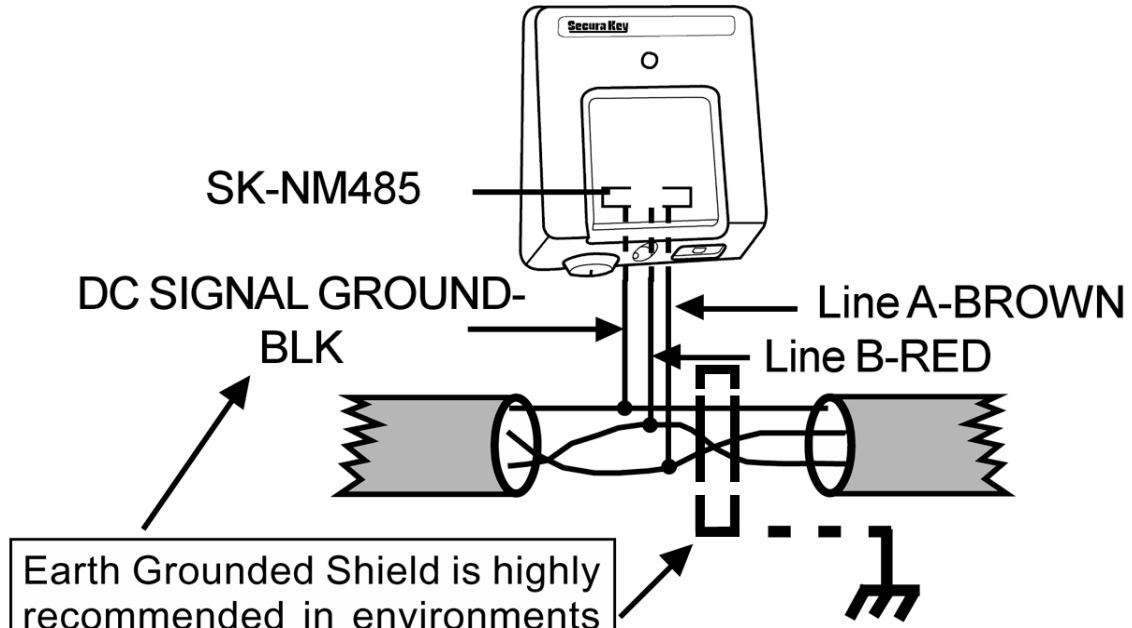
While the best performance and longest total cable distance is achieved by connecting networked readers in series (daisy chained), other configurations such as “T”, Star/Fanout, and Stubbed are possible (Figure A3).

Typically, an RS-485 Networked system will be used with SK-NET™ Software for WINDOWS® 95/98/NT.

However, if a PC running SA-NET™ or SA-LINK™ (or an ANSI-compatible terminal software program) is connected to the RS-232 port of any reader connected to the RS-485 network, some basic global functions can be programmed and broadcast to all readers.

These basic functions allow the user to control or program multiple units from a single PC, to copy programming from one unit to the entire network, and to use global antipassback. This is ideal for small systems or parking applications where a PC or laptop computer with WINDOWS® 95 is unavailable.

A Serial Printer can be connected to the RS-232 port of any reader to provide real time transaction printing for the entire network. Use the CBLSA Cable Kit for temporary connection via the RJ-11 data jack, or use the wiring diagrams for Printer and PC connection on pages 49-50 of the 28SA-Plus Manual.



Earth Grounded Shield is highly recommended in environments subject to high voltage electrical discharge (i.e.. lightning). Shield should be connected to earth ground only at one end of the cable. DC Signal Ground may be necessary in networks with very long wire runs. DC Signal Ground wire is NOT to be connected to earth ground.

- Install Optional SK-NM485 Network Module in each 28SA Plus
- Network Module fits inside reader housing, has built-in transient protection

Figure A1 - Network Wiring Connections

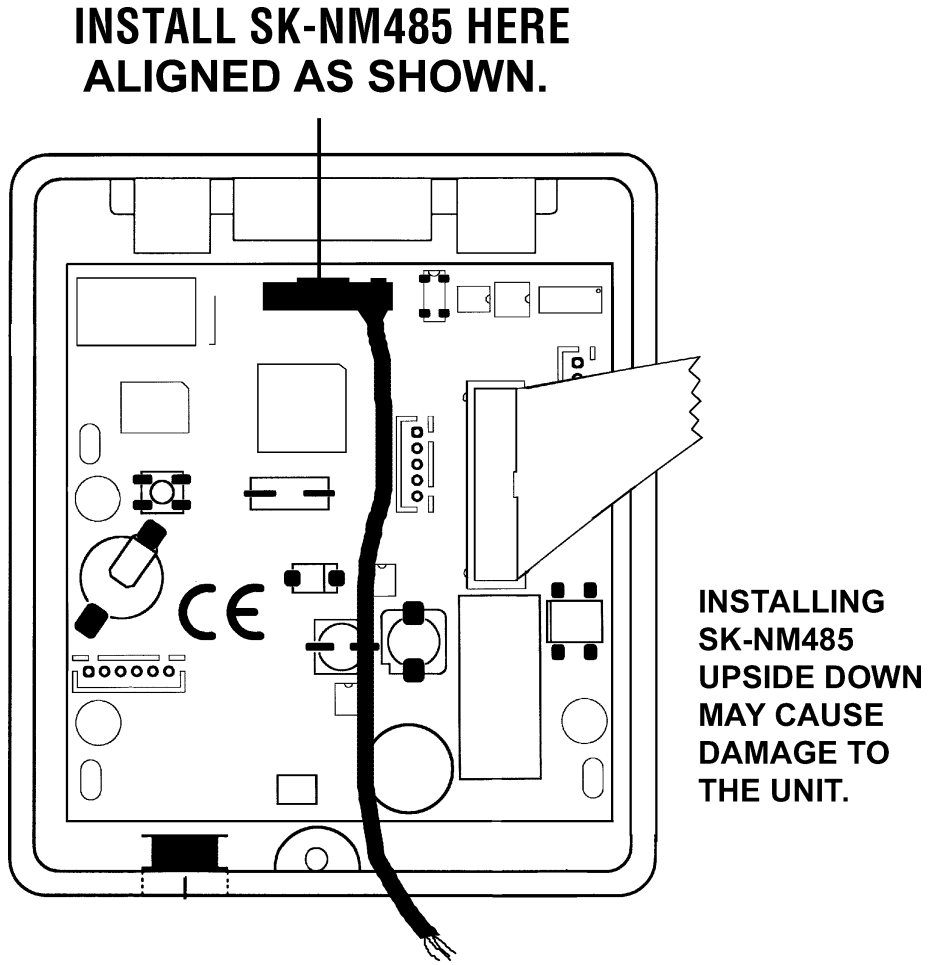
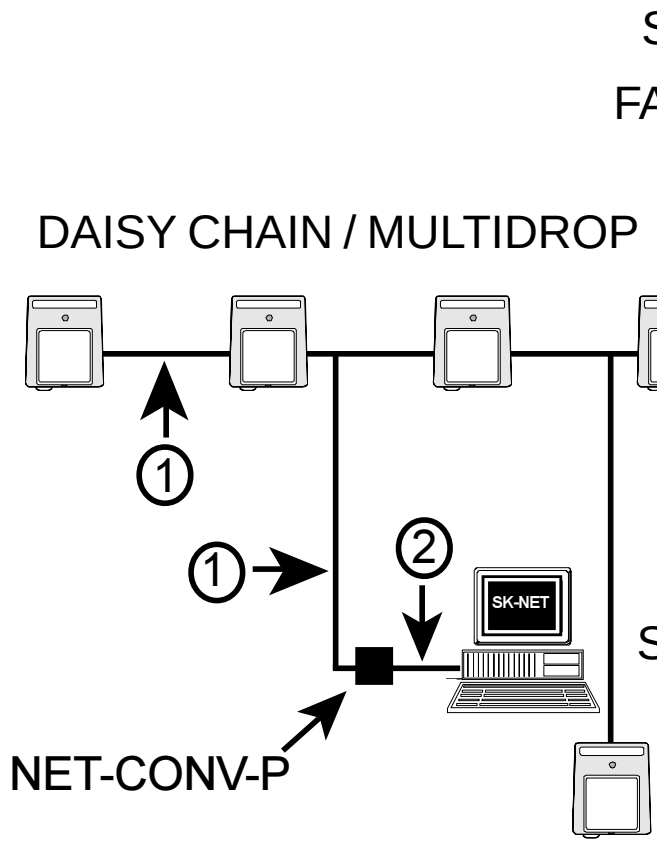


Figure A2 - SK-NM485 Module Installation



CONFIGURATION OPTIONS:

- DAISY CHAIN / MULTIDROP *
- "T"-CONFIGURATION
- STAR/FANOUT
- STUBBED

* Best performance and longest total cable distance

① **NETWORK CABLE:**
RS-485, using Single Twisted Pair, Shielded cable with a signal ground, such as Belden #9842 (includes one spare conductor) 18-26 AWG. Shield is recommended, but not required. DC Signal Ground is recommended in networks with very long wire runs. Total system cable length: 4,000 ft.

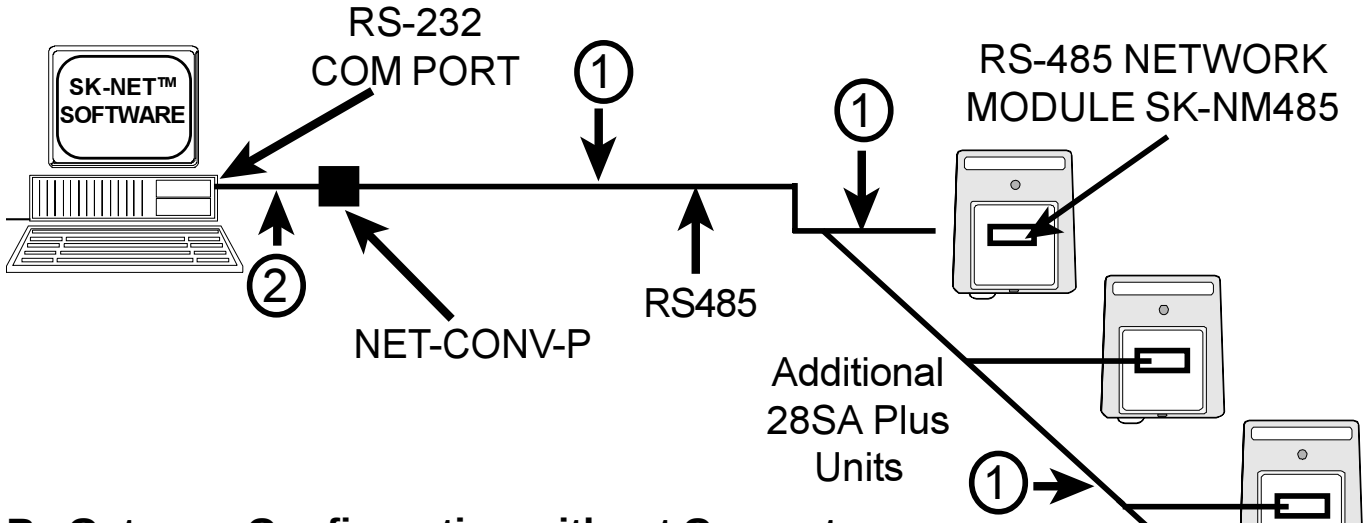
② **SERIAL CABLE:**
RS-232, PC or printer to 28SA-Plus, 5-Conductor, Shielded, 18-24 AWG. Maximum length: 300 ft. (9600 baud);100 ft. (38400 baud)

Figure A3 - System Configuration Options

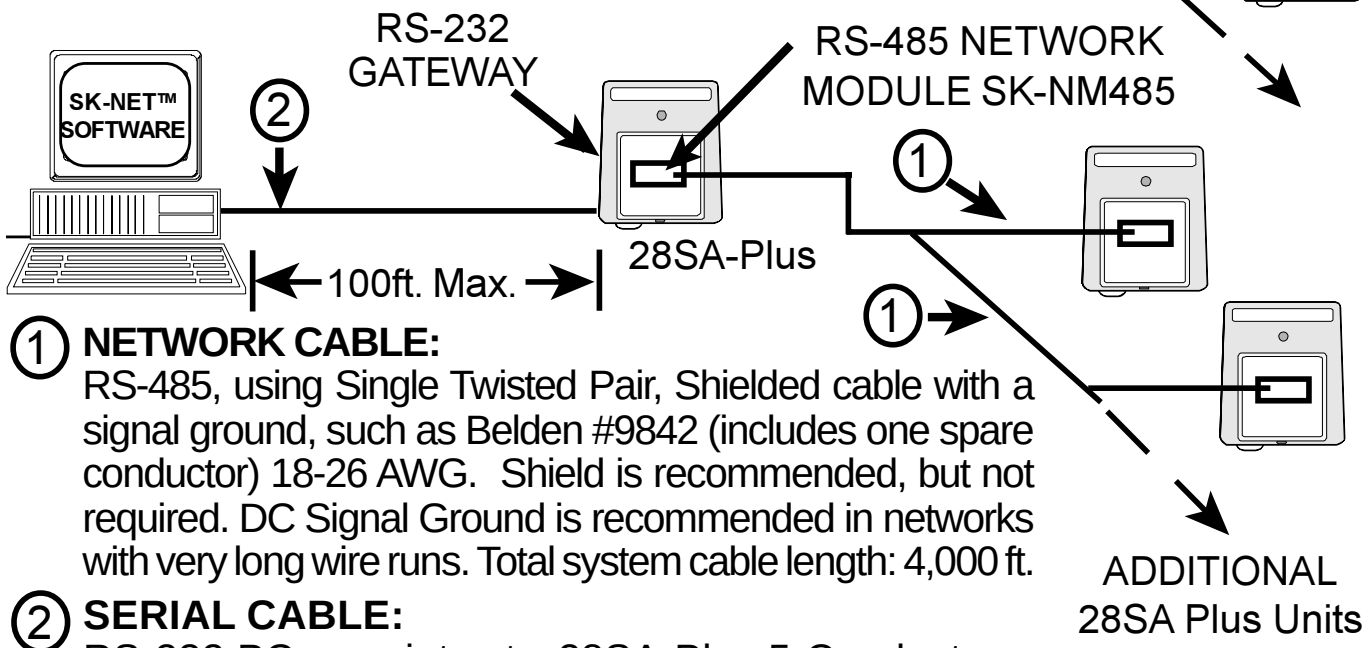
OPTIONS FOR CONNECTION OF THE 28SA-PLUS NETWORK TO A PC

There are two options to connect a modem to a PC. Option A is recommended for large systems or systems with high traffic volume.

A. Standard Configuration with Converter



B. Gateway Configuration without Converter



① **NETWORK CABLE:**
RS-485, using Single Twisted Pair, Shielded cable with a signal ground, such as Belden #9842 (includes one spare conductor) 18-26 AWG. Shield is recommended, but not required. DC Signal Ground is recommended in networks with very long wire runs. Total system cable length: 4,000 ft.

② **SERIAL CABLE:**
RS-232,PC or printer to 28SA-Plus,5-Conductor, Shielded, 18-24 AWG. Maximum length:
300 ft. (9600 baud); 100 ft. (38400 baud).

Figure A4 - Network to PC Connection Options

APPENDIX B
USING 28SA-PLUS NETWORK WITHOUT A PC ON-LINE

GLOBAL NETWORK OPTIONS

This option appears on the 28SA-Plus' Utility Menu only when an SK-NM485 Network Module is installed in connector J4 in the 28SA-Plus unit.

Global Network Options allow you to program multiple networked 28SA-Plus units by connecting a PC to any 28SA-Plus on the Network. This can be done by connecting the CBLSA cable kit to the RJ-11 data jack, or by hard-wiring a cable to the communications inputs (1 - 5) on the Terminal Block (see Page 49). You may use SA-NET™, SA-LINK™, or a WINDOWS® Terminal program to access the Reader Menu System.

To access Global Network Options from the Main Menu, choose 7 (Utilities), then select 5 (Global Network Options), to display the following menu:

GLOBAL NETWORK MENU

KEYSTROKE	SELECTION
1	DOOR OPTIONS
2	ANTIPASSBACK FORGIVE
3	PROGRAM CARDS INTO A TIME ZONE
4	CLONE READER SETTINGS

DOOR OPTIONS

Door Options allow you to control all readers on the network simultaneously. Select 1 from Global Network Menu to display the Door Options submenu. The following options are available:

NETWORK DOOR MENU - READER STATE: ACTIVE

KEYSTROKE	SELECTION
1	OPEN DOORS NOW
2	UNLOCK DOORS INDEFINITELY
3	MAKE READERS INACTIVE INDEFINITELY
4	RETURN TO NORMAL MODE

OPEN DOORS NOW. To select this option, choose 1 from the Door Options Menu. This will activate the latch relay on all connected readers for the latch time programmed at each reader. You will be prompted to confirm this command; press Y to proceed or N to cancel.

OPEN DOORS INDEFINITELY. To select this option, choose 2 from the Door Options Menu. This will activate the latch relay on all connected readers continuously, until the command is canceled. You will be prompted to confirm this command; press Y to proceed or N to cancel.

MAKE READERS INACTIVE INDEFINITELY. To select this option, choose 3 from the Door Options Menu. This will put the reader into inactive mode: the red light will blink slowly, and the reader will not accept any cards. This will continue until the command is canceled. You will be prompted to confirm this command; press Y to proceed or N to cancel. You will be prompted to confirm this command; press Y to proceed or N to cancel.

RETURN TO NORMAL MODE (CANCEL 2 OR 3). To select this option, choose 4 from the Door Options Menu. This will cancel either the Open Doors Indefinitely or Make Readers Inactive Indefinitely Commands.

ANTIPASSBACK FORGIVE

When Real Antipassback is in use, cardholders' Antipassback status often becomes out of synchronization due to tailgating (one cardholder uses his card to enter a door and others follow without using their cards), parking lot gate arms being left up after hours, repairs being done to gates or doors, etc. The result is that card users are locked out because they are trying to get IN when the system thinks they are already IN (or vice versa).

Antipassback Forgive allows all or designated card users one "free" entrance or exit regardless of their present Antipassback status, so that they can get back in sync.

Select 2 (Antipassback Forgive) from the Global Network Menu. You will be prompted to forgive A(All) or a R(Range) of cards. If you select R, enter the first and last card numbers, then Confirm by pressing Y to proceed or N to cancel.

PROGRAM CARDS INTO A TIME ZONE

This option is the same as for a single reader, except that here, it applies to all readers on the network.

Select 3 (Program Cards Into a Time Zone) from the Global Network Menu. Select a Time Zone, then enter the first and last card numbers of the range that you wish to program for the selected Time Zone. To program only one card, enter the first card number, then press Enter twice. You will be asked if you are sure: press Y to proceed or N to cancel.

CLONE READER SETTINGS

This option allows you to copy settings from the reader currently connected to the PC to all readers on the network.

Select 4 (Clone Reader Settings) from the Global Network Options Menu. The following menu is displayed:

NETWORK CLONE MENU

KEYSTROKE	SELECTION
1	CLONE BASIC SETTINGS
2	CLONE HOLIDAYS
3	CLONE TIME ZONES
4	CLONE ANTI-PASSBACK
5	SYNCHRONIZE TIME

When you select any option, you are prompted “Are you sure?” Enter Y to proceed or N to cancel.

The Network Clone Menu offers four groups of reader settings plus a Synchronize Time option.

CLONE BASIC SETTINGS

This option copies the following basic settings from the connected reader to all readers on the network:

Timed Antipassback Time Value
Latch Timer Value
Primary Reader IN/OUT Type
Antipassback Type
Terminal Baud Rate
Limited Use Base Number
Limited Use End Card Number
Real Antipassback Forgive Hour

CLONE HOLIDAYS

This option copies all Holiday Dates from the connected reader to all readers on the network.

CLONE TIME ZONES

This option copies all Time Zone schedules from the connected readers to all readers on the network. It does not copy any of the associated Antipassback settings.

CLONE ANTI-PASSBACK

This option copies the Antipassback settings assigned to each Time Zone from the connected reader to all readers on the network.

SYNCHRONIZE TIME

This option copies the time of day from the connected reader to all readers on the network.

SPECIFICATIONS

PHYSICAL

	Surface Housing	Flush Housing	Metal Housing
Depth	2.25 in (5.72 cm)	1.50 in (3.8 cm)	1.75 in (4.45 cm)
Width	4.00 in (10.16 cm)	5.50 in (13.97 cm)	4.00 in (10.20 cm)
Height	4.60 in (11.70 cm)	7.63 in (19.38 cm)	5.62 in (14.30 cm)
Weight	20 oz (0.57 kg)	18 oz (0.51 kg)	45 oz (1.28 kg)
Material	Lexan® (Polycarbonate)		All Steel
	*Meets UL standard 94 flame retardant rating		

POWER REQUIREMENTS

Without Remote Reader	12 to 24 VAC or VDC; 125 mA at 12 VAC
With Remote Reader (SK-029W)	12 to 16 VAC or VDC; 250 mA at 12 VAC

OUTPUTS

Latch & Alarm Shunt	DPDT contacts, 115 VAC or 28 VDC, 3A maximum
Tamper (optional)	SPDT contact, 115 VAC, 2A maximum

INPUTS

Auxiliary 1, 2, & 3	All require SPST contact closure

COMMUNICATION

RS-232	Serial RS-232. Up to 38.4 kBaud, full duplex, 1 start bit, 8 data bits, 1 stop bit, no parity
RS-485	Requires SK-NM485 module, at 19.2KBaud
Remote Reader	31 bit or 26 bit Wiegand type input. 12 VDC @ 150 mA supplied to remote reader
Modem	Requires Hayes compatible - 1200 to 33.6 kBaud

ENVIRONMENT

Ambient Temperature	-40°F to 158°F (-40°C to 70°C)
Humidity	0% to 95% relative humidity (non-condensing)

OPERATIONAL

Memory	Non-volatile
Card Capacity	65,000
Limited Use Cards	4000
Transaction Storage	5000
Time Zones	15 for card access, 1 door unlock time zone, full week plus holiday in one-half hour segments; 32 holidays programmable; selectable automatic daylight savings time
Facility Code	Up to 3 different codes simultaneously
Latch/Alarm Shunt Timer	Programmable from 1 to 30 seconds (0 = 1/4 second)
Timed Antipassback	Programmable from 1 to 30 minutes (hard or soft)
Auxiliary Inputs (3)	Programmable for door monitor, tamper monitor, remote open, remote inactive, bell, arming circuit, or user defined.

WARRANTY (U.S. and Canadian)

“Secura Key products are warranted against defects in materials and workmanship for a period of 2 years from the date of purchase. Secura Key will replace any Secura Key manufactured product, except cards or tags, returned to us freight prepaid within the warranty period. This warranty does not include freight, taxes, duties, or installation expenses. THE WARRANTY SET FORTH ABOVE IS EXCLUSIVE AND NO OTHER WARRANTY, WHETHER WRITTEN OR ORAL, IS EXPRESSED OR IMPLIED. SECURA KEY SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES OR MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. The remedies provided herein are the buyers’ sole and exclusive remedies. In no event shall Secura Key be liable for direct, indirect, special, incidental or consequential damages (including loss of profits), whether based on contract, tort or any other legal theory.” Contact Secura Key for Export Warranty Policy.

WARNING:

INSTRUCTION TO THE USER

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more or the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet of a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment has been certified to comply with the limits for a class B computing device, pursuant to FCC Rules. In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of the manufacturer could void the user's authority to operate this equipment.